

Anthuridae of the genera *Amakusanthura*,
Cortezura and *Mesanthura*
from the Caribbean Sea
of Colombia (Crustacea: Isopoda)

by

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With 180 figures

ABSTRACT

New species and records are presented for the isopod genera *Amakusanthura*, *Cortezura* and *Mesanthura* (Anthuridae) from the Santa Marta area, Caribbean Sea of Colombia. *Amakusanthura paramagnifica* n. sp., *A. tengo* n. sp. and *A. vermiformis* n. sp. are described. Complete redescriptions are given for *Amakusanthura signata* (Menzies & Glynn, 1968), *Mesanthura* cf. *brasiliensis* Koenig, 1980, *M. hopkinsi* Hooker, 1985 and *M. punctillata* Kensley, 1982. An additional description is provided for *Cortezura confixa* (Kensley, 1978). The interspecific affinities of most species are discussed and notes upon the habitat preference and geographical distribution are also given.

This account forms part of a series surveying the free-living marine isopods of the Santa Marta area, Caribbean Sea of Colombia. The family Anthuridae is represented with 10 species out of 4 genera. Except for one new species of *Skuphonura* Barnard, 1925, which is treated elsewhere (Brusca & Müller 1991), this material is dealt with herein. Beside the three new species found, several already known species also required detailed descriptions.

Most specimens were collected by the author during a fieldwork of almost 14 months in 1985-86, carried out at the Instituto de Investigações marinas de Punta de Betin in Santa Marta, Colombia (INVEMAR/COLÇIENCIAS).

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My thanks are due to the German Academic Exchange for a financial grant to make to fieldwork possible over such a long time and also to the staff of the INVEMAR for technical support. Bernd Werding and Luz-Elena Velasquez kindly made available several specimens of *Cortezura confixa*. I am also grateful to Thomas E. Bowman and Marilyn Schotte from the National Museum of Natural History, Washington, for the loan of type material of *Amakusanthura cracenta* and *A. magnifica*.

Specimens are deposited in the Muséum d'Histoire naturelle, Genève (MHNG), the Muséum national d'Histoire naturelle, Paris (MNHN), the marine biological station INVEMAR and in the author's private collection.

ANTHURIDAE

AMAKUSANTHURA Nunomura, 1977

Amakusanthura paramagnifica n. sp. (Figs 1-23)

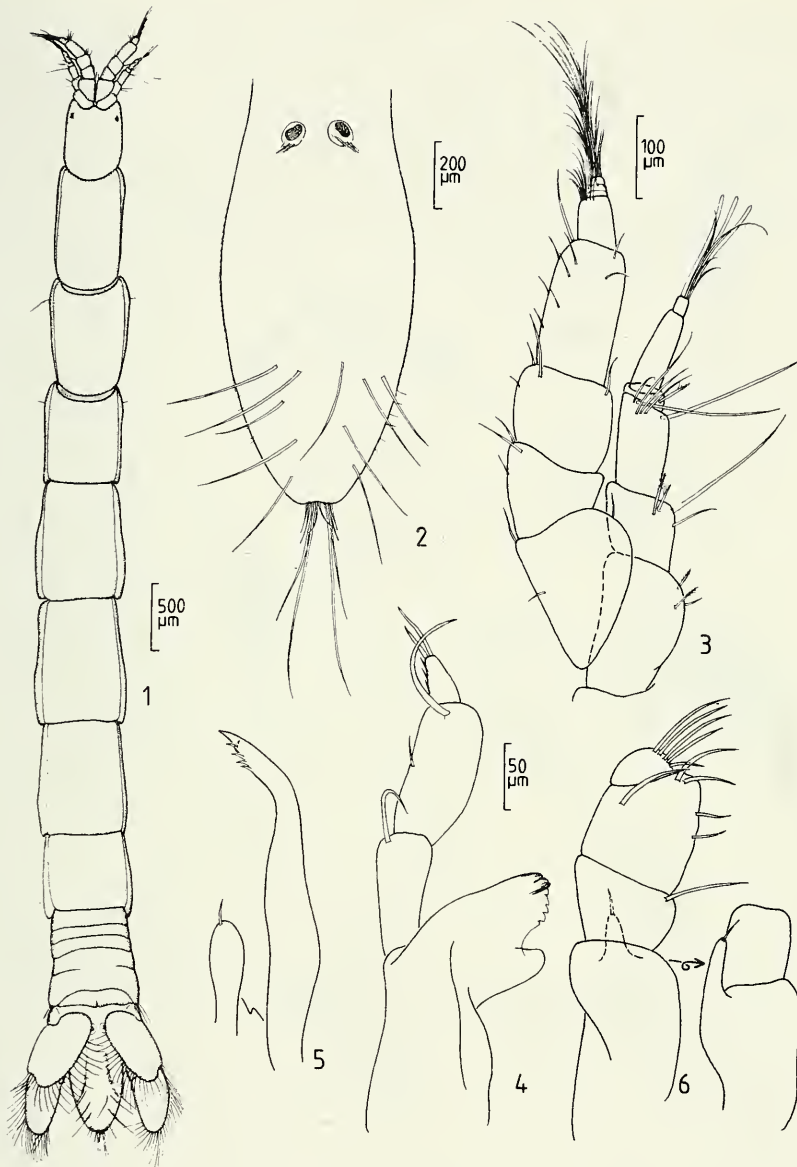
H o l o t y p e . – Non-reproductive adult (MHNG); Santa Marta, Punta de Betin; under rocks on sand bottom, 1-2 m, 4 February 1986.

P a r a t y p e . – ♂ (MHNG; collected together with the holotype).

Derivatio nominis. – The specific name refers to the presumed close relationship to *Amakusanthura magnifica* (Menzies & Frankenberg, 1966).

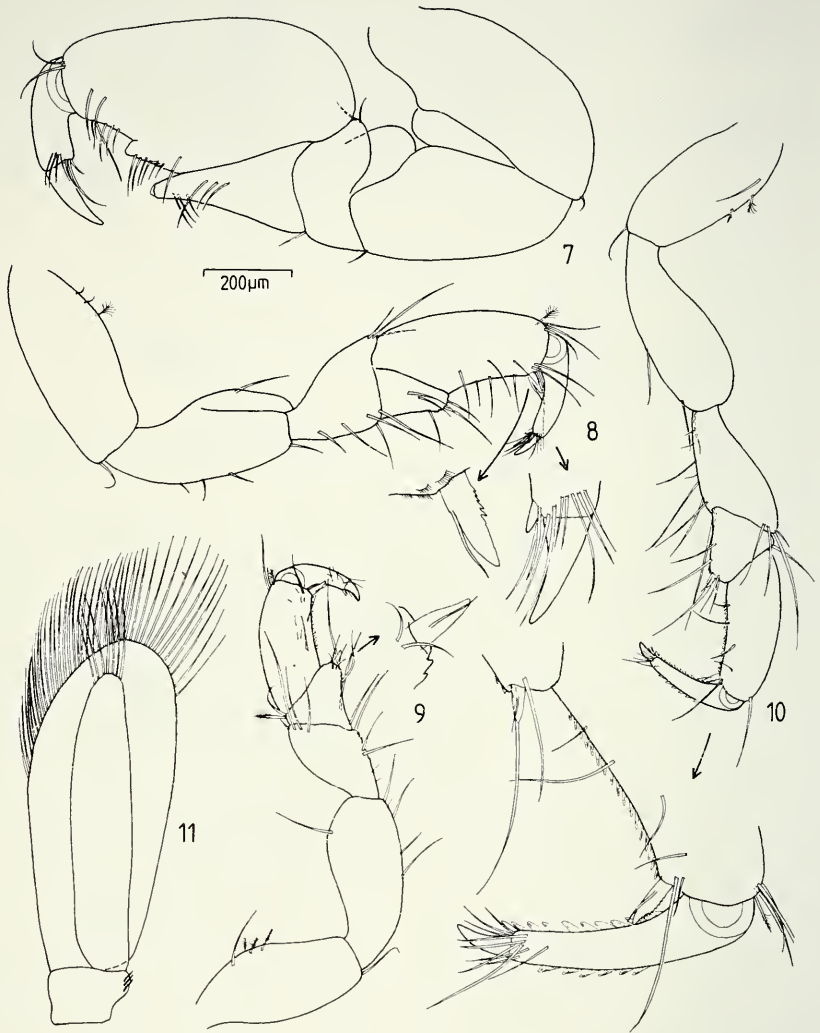
Description, non-reproductive adult. – Body relatively slender, 11 times longer than wide, colourless. Total length 7.7 mm. Cephalon 1.4 times longer than wide, with small, darkly pigmented dorsolateral eyes in distal third. Body proportions: C<1>2>3<4=5>6>7. Three anterior pleonites with distinct suture line dorsally; this line lacking between fourth and fifth pleonite. Telson tongue-shaped, raised middorsally, setose distal margin with shallow concavity; dorsolateral surface of telson with 5 pairs of long simple setae in distal half; distal margin of telson with 3 pairs of short and 2 pairs of long simple setae.

Antenna 1, peduncle 3-articulated; proximal article longest and widest; short second article with a long, laterally directed seta at outer distal margin; slender third peduncular article with 2 long, laterally directed setae; flagellum 3-articulated; first article short, much wider than long; slender second article longest; small terminal article with 4 simple setae and 3 aesthetascs. Antenna 2, peduncle 5-articulated; second article largest, grooved to accommodate peduncle of antenna 1; flagellum of 4 setose articles; first article longer than other flagellar articles together. Incisor of mandible 3-cuspidate, lamina dentata with 4 indentations; molar process cone-shaped; second article of 3-articulated mandibular palp longest and widest; both first and second palp article with curved, slender spine near distal margin; terminal article smallest, with two short distal spines. Maxilla slender, medially curved in distal third, inner distal margin with 5 teeth and a very short seta between third and fourth tooth. Maxilliped with relatively short, slender endite tipped with a short, simple seta; palp of maxilliped 3-articulated; proximal article with simple seta at mediodistal margin; second article with 4 curved setae at mediodistal margin and another seta near outer distal margin; terminal article roughly semicircular, mediodistal margin bearing 5 curved setae along medial margin, increasing in length distally. Propodus of pereopod 1 expanded, palm with several setae and a tooth-shaped tubercle at about midlength; dactylus 1.2 times length of unguis; carpus elongate-triangular, posterodistal margin bearing fringe of scales. Pereopods 2-7 in shape and size similar among one another, moderately setose; posterior margin of propodus faintly concave, bearing a short



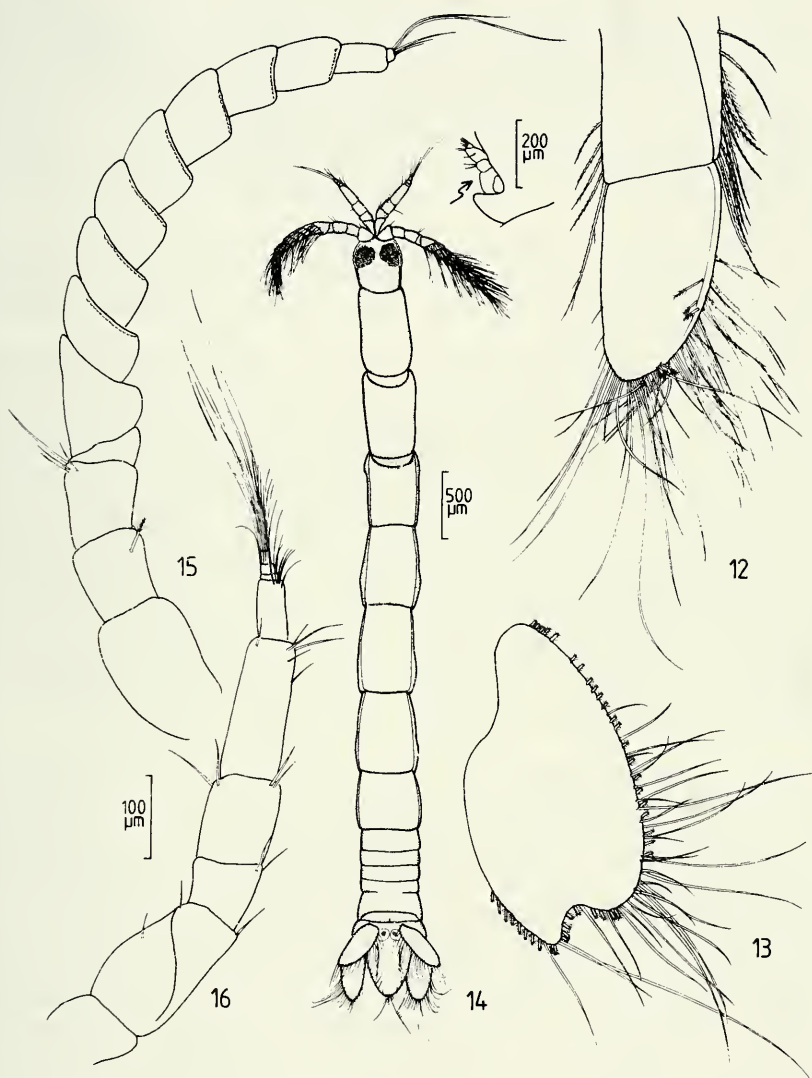
FIGS 1-6.

Amakusanthura paramagnifica n. sp., non-reproductive adult: 1) dorsal view; 2) telson; 3) antenna 1 and 2; 4) mandible; 5) maxilla; 6) maxilliped.



FIGS 7-11.

Amakusanthura paramagnifica n. sp., non-reproductive adult: 7) pereopod 1; 8) pereopod 2; 9) pereopod 4; 10) pereopod 7; 11) pleopod 1.



FIGS 12-16.

Amakusanthura paramagnifica n. sp. – Non-reproductive adult: 12) uropodal sympodite and endopodite; 13) uropodal exopodite. ♂: 14) dorsal view; 15) antenna 1; 16) antenna 2.

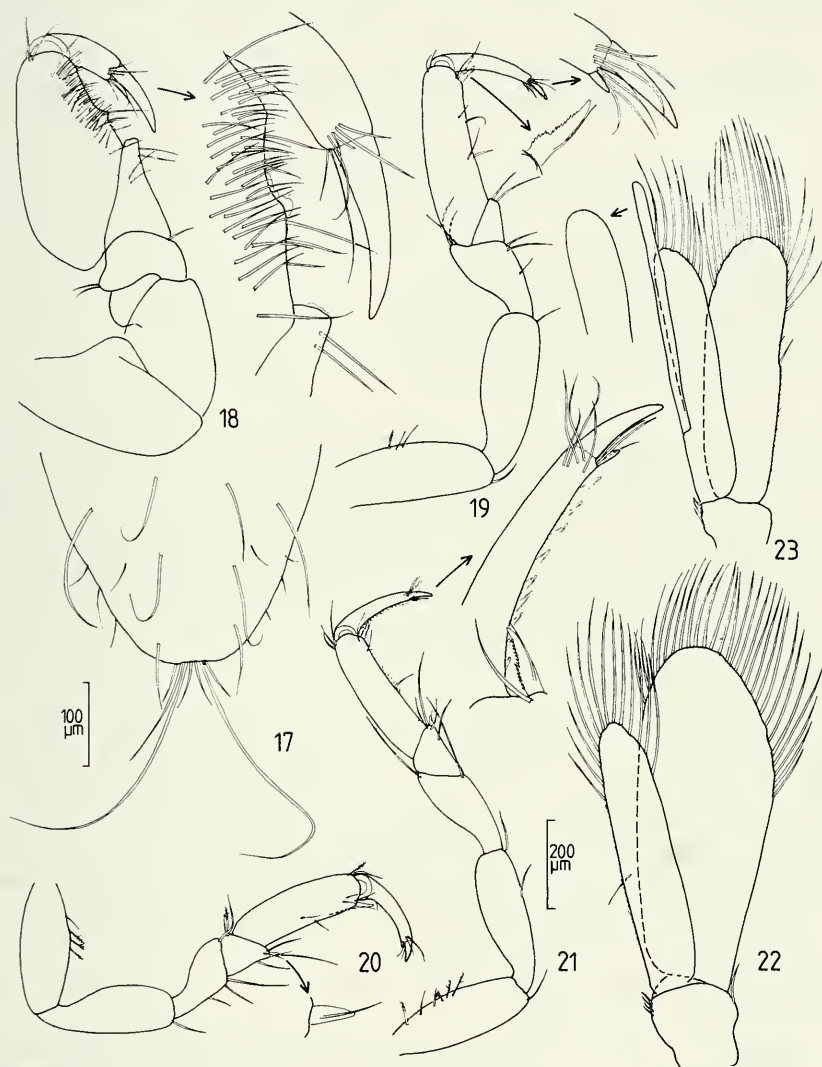
denticulate compound spine distally; carpus of pereopods 2-3 roughly triangular, lacking free anterior margin; carpus of pereopods 4-7 trapezoid, free anterior margin very short; posterodistal margin of carpus with short, non-denticulate compound spine; anterior and posterior margin of dactylus, as well as posterior margin of propodus in pereopod 7 bearing row of several scales. Pleopod 1, slender endopodite 9/10 length of operculiform exopodite; distal margin of endopodite with 7, of exopodite with 39 plumose setae (drawn as simple setae); sympodite with 3 retinaculæ. Uropodal endopodite relatively slender, ovate, longer than sympodite and extending slightly beyond distal margin of telson; outer and distal margin of endopodite bearing many long and short simple setae; dorsal surface of endopodite, near outer and distal margin with 6 feathered sensory setae; ovate exopodite with deep distal concavity; exopodite bearing several simple and plumose marginal setae.

♂. – Habitus similar to non-reproductive adult. Total length 5.7 mm. Eyes darkly pigmented and very large, in distal half of cephalon. Cephalon anterior of maxilliped articulation with rounded tubercle. Dorsolateral surface of telson with 4 pairs of relatively short, simple setae in distal third.

Antenna 1 with 11-articulated, elongate flagellum; articles 2-9 bearing whorl of filiform aesthetascs; terminal article minute, with 4 distal simple setae. Articles of second antenna more slender than in non-reproductive adult. Pereopods more slender than in non-reproductive adult, propodus of pereopod 1 less expanded. Palm of pereopod 1 propodus with shallow tubercle bearing fringe of scales, mesial surface of propodus with 36 curved setae; posterodistal projection of carpus shorter than in non-reproductive adult. Propodus of pereopods 2-7 with finely denticulate compound spine at posterodistal margin. Posterior margin of dactylus and propodus in pereopod 7 with row of several scales. Pleopod 1, slender endopodite 4/5 length of operculiform exopodite; distal margin of endopodite with 13, of exopodite with 27 plumose setae (drawn as simple setae); sympodite with 4 retinaculæ. Both rami of pleopod 2 relatively slender, endopodite slightly shorter than exopodite; appendix masculina slender, articulating in proximal third, extending with about 3/10 of its entire length beyond distal margin of endopodite; distal margin of endopodite with 7, of exopodite with 16 plumose setae (drawn as simple setae).

Remarks. – *A. paramagnifica* n. sp. seems to be closely allied with *Amakusanthura magnifica* (Menzies & Frankenberg, 1966), from which the holotype, a non-reproductive adult, was available for comparison (registration number USNM 111073, type locality off Georgia). Both species are very similar in their general habitus. However, there are some differing features, which indicate that *A. magnifica* and the colombian material are not conspecific. The holotype of *A. magnifica* bears only 2 pairs of long simple setae at the dorsodistal surface of the telson, which has been correctly figured in the original description (Menzies & Frankenberg, 1966: 83, fig. 17 B). Moreover, the distal margin of the telson bears only 4 long and 4 short setae in that species. Other features to distinguish *A. magnifica* from the new species is the less projected distal part of the carpus in pereopod 1 and the shallowly concave distal margin of the uropodal exopodite in the former. Though the ♂ paratype of *A. magnifica* was not available for comparison, some differing features are mentioned in the original description. The palmar tubercle of the pereopod 1 propodus is longer in that species. Moreover, the mesial surface of the propodus bears only about 16 curved setae. The appendix masculina of *A. magnifica* seems to be curved in its distal part, only slightly extending beyond the distal margin of the endopodite.

It remains doubtful, whether the material recorded and figured by some other authors under the name *A. magnifica* truly belongs to that species (Kruczynski & Myers, 1976:



FIGS 17-23.

Amakusanthura paramagnifica n. sp., ♂: 17) distal part of telson; 18) pereopod 1; 19) pereopod 2; 20) pereopod 4; 21) pereopod 7; 22) pleopod 1; 23) pleopod 2.

355; Schultz, 1978: 909; Kensley & Schotte, 1989: 20). The specimens described in these publications disagree in several features with the type material of *A. magnifica* and need a careful revision.

Because only 2 specimens of *A. paramagnifica* were found in the Santa Marta area, nothing is known upon its habitat preference and vertical distribution.

Distribution. – Caribbean Sea of Colombia.

Amakusanthura signata (Menzies & Glynn, 1968) (Figs 24-51)

Apanthura signata Menzies & Glynn, 1968: 28-29, fig. 10.

Apanthuretta signata; Wägele, 1981: 135.

Apanthura signata; Kensley, 1982a: 325, fig. 143.

Apanthuretta signata; Negoescu & Wägele, 1983: 109.

Apanthura signata; Ortiz, Lalana & Gómez, 1987: 30.

Amakusanthura signata; Kensley & Schotte, 1989: 21-23, fig. 6 A-E.

Material. – Bahía de Santa Marta: 1 manca (MHNG); Punta de Betin; coral rubble, 15-20 m, 29 November 1985. 1 non-reproductive adult (MHNG); Punta de Betin; coral rubble, 12 m, 29 November 1985. 1 non-reproductive adult (Coll. Müller); Punta de Betin; coral rubble with hydroids, 22-27 m, 1 December 1985. 1 non-reproductive adult (Coll. Müller); *Thalassia*, 2-3 m, 7 December 1985. 1 postmanca (MHNG); Punta de Betin; coral rubble covered with debris and sand, 12-15 m, 15 December 1985. 2 non-reproductive adults, 1 manca (MNHN); Punta de Betin; coral rubble, 22 m, 18 December 1985. 1 non-reproductive adult (MHNG); Punta de Betin; coral rubble, 16 m, 2 January 1986. 1 non-reproductive adult, 2 mancas (MHNG); Punta de Betin; coral rubble, 14 March 1986.

Isla Morro Grande de Santa Marta: 1 non-reproductive adult (Coll. Müller); coral rubble covered with detritus and sand, 21-22 m, 9 December 1985.

Punta Ancón, near Taganga, about 5 km east of Santa Marta: 1 ♂, 1 postmanca (MHNG); coral rubble, 15 m, 2 August 1985.

Punta Aguja, about 5 km north-east of Santa Marta: 2 non-reproductive adults (1 preparatory ♂) (Coll. Müller); coral rubble with hydroids, 24 September 1985. 1 non-reproductive adult (Coll. Müller); coral rubble, 17-20 m, 7 December 1985. 1 non-reproductive adult (Coll. Müller); coral rubble, 17-19 m, 9 January 1986.

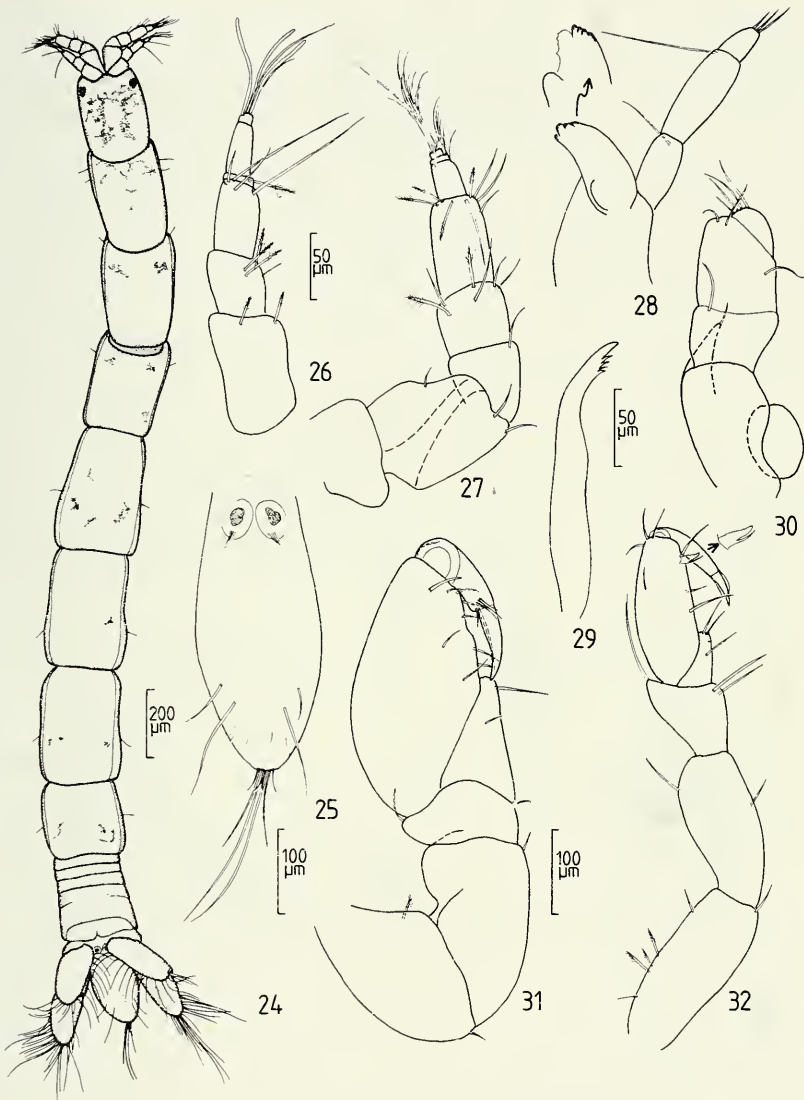
Bahía Concha, about 10 km north-east of Santa Marta: 1 non-reproductive adult (INVEMAR); from *Sargassum cymosum* on rocky shore, 5 l substratum, 0-0.5 m, 7 June 1985. 1 non-reproductive adult (Coll. Müller); *Thalassia*, 2-3 m, 8 November 1985. 15 non-reproductive adults (1 preparatory ♂), 2 postmancas, 4 mancas (MHNG); *Thalassia* and coralline algae, 2-3 m, 7 January 1986.

Bahía de Chengue, about 15 km north-east of Santa Marta: 7 non-reproductive adults, 2 mancas (Coll. Müller); *Thalassia*, 2-3 m, 2 May 1986.

Bahía de Cinto, about 30 km north-east of Santa Marta: 1 manca (Coll. Müller); from algae, hydroids and detritus, 6 m, 4 June 1985.

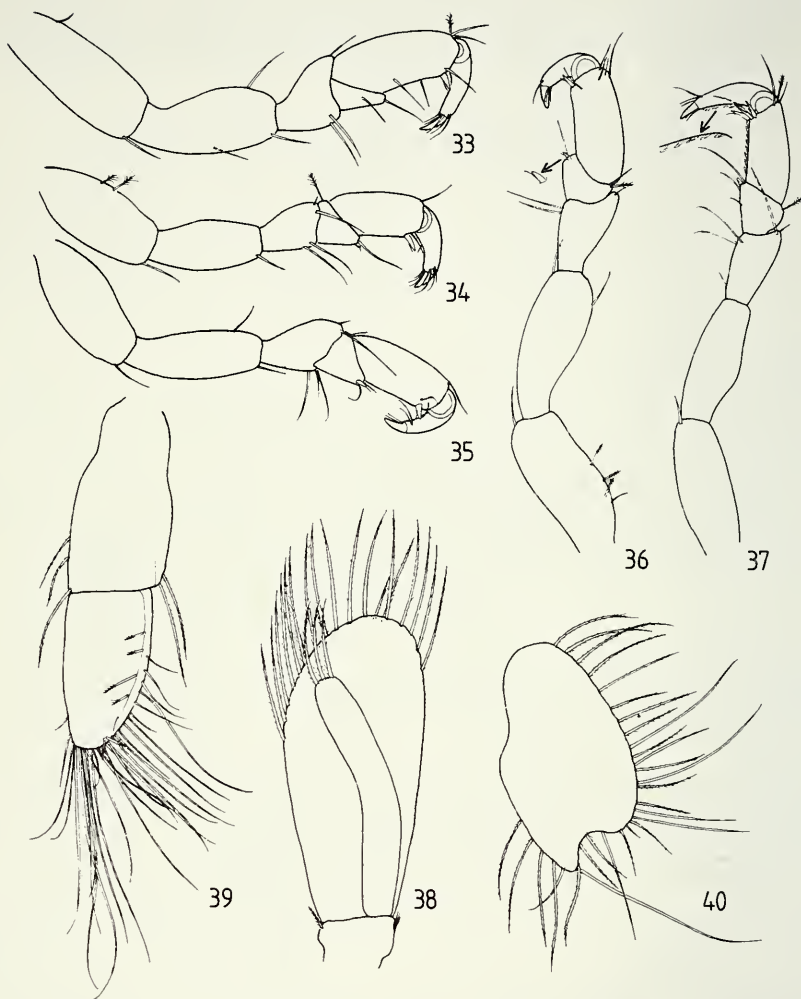
Description, non-reproductive adult. – Body slender, 12 times longer than wide. Total length 2.7-4.2 mm. Dorsum of cephalon and pereonites with some small, irregular pigment reticulations. Cephalon 1.4 times longer than wide; dorsolateral eyes well pigmented, in distal third of cephalon. Body proportions: C<1<2>3<4=5>6>7. Three anterior pleonites with distinct suture line dorsally, suture line lacking between fourth and fifth pleonite dorsally. Telson tongue-shaped, its distal margin narrowly rounded; dorsolateral surface of telson with 2 pairs of slender simple setae; distal margin of telson with 2 pairs of short and 2 pairs of longer setae.

Antenna 1, peduncle 3-articulated; proximal article longest and widest; third peduncular article with 2 long, laterally directed setae; flagellum 3-articulated; first article shortest, much wider than long; second article longest; small terminal article with 2 simple



FIGS 24-32.

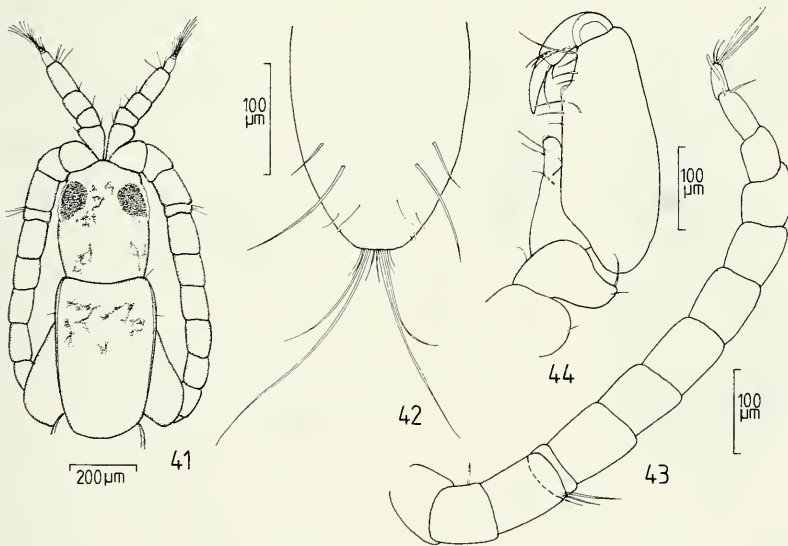
Amakusanthura signata (Menzies & Glynn, 1968), non-reproductive adult: 24) dorsal view; 25) telson; 26) antenna 1; 27) antenna 2; 28) mandible; 29) maxilla; 30) maxilliped; 31) pereopod 1; 32) pereopod 2.



FIGS 33-40.

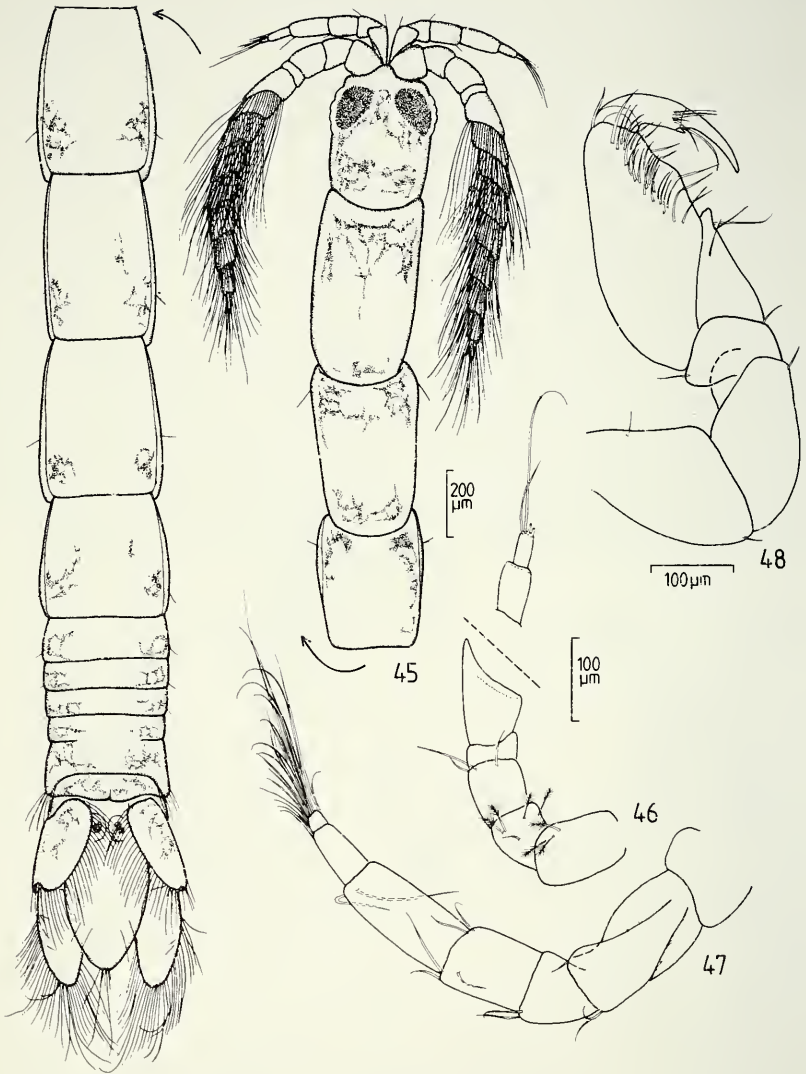
Amakusanthura signata (Menzies & Glynn, 1968), non-reproductive adult: 33) pereopod 3; 34) pereopod 4; 35) pereopod 5; 36) pereopod 6; 37) pereopod 7; 38) pleopod 1; 39) uropodal sympodite and endopodite; 40) uropodal exopodite.

setae and 3 aesthetascs. Antenna 2, peduncle 5-articulated; second article longest and widest, grooved to accommodate peduncle of antenna 1; flagellum of 3 setose articles; proximal article much longer than two distal articles together. Incisor of mandible 4-cuspidate, lamina dentata with 4 small indentations; molar process cone-shaped; second article of 3-articulated mandibular palp longest, with long, laterally directed seta; proximal article with shorter seta at distal margin; terminal article smallest, with 3 short distal spines. Maxilla slender, medially curved in distal third, distal part 5-toothed. Maxilliped with slender endite extending beyond proximal half of first palp article; endite tipped with short simple seta; palp of maxilliped 3-articulated; first article bearing a simple seta, second article with 3 simple setae; terminal article semioval, with 4 curved setae at mediolateral margin. Propodus of pereopod 1 expanded, palm with shallow tubercle and some simple setae; dactylus 1.2 times length of unguis; carpus triangular, weakly produced posterodistally. Pereopods 2-7 in shape and size similar among one another; posterior margin of propodus straight or faintly concave, bearing a short compound spine distally; moreover, posterodistal margin of pereopod 7 with 2 more slender compound spines; carpus of pereopods 2-3 triangular, lacking free anterior margin; carpus of pereopods 4-7 trapezoid, with free anterior margin and short compound spine at posterodistal margin; posterior margin of propodus and dactylus in pereopod 7 with row of scales. Pleopod 1, endopodite slender. 4/5 length of operculiform exopodite; distal margin of endopodite with 3, of exopodite with 18 plumose setae; sympodite with 3 retinaculae. Uropodal sympodite 1.2 times length of relatively slender, ovate endopodite; endopodite bearing many long, slender simple setae at outer and distal margin; dorsal surface of endopodite, near outer and distal margin with 6 feathered sensory setae; uropodal exopodite ovate, with deep distal concavity; exopodite with some simple and several plumose setae.



FIGS 41-44.

Amakusanthura signata (Menzies & Glynn, 1968), preparatory ♂: 41) anterior part of body, dorsal view; 42) distal half of telson; 43) antenna 1; 44) distal part of pereopod 1.



FIGS 45-48.

Amakusanthura signata (Menzies & Glynn, 1968), ♂: 45) dorsal view; 46) antenna 1, some flagellar articles omitted; 47) antenna 2; 48) pereopod 1.

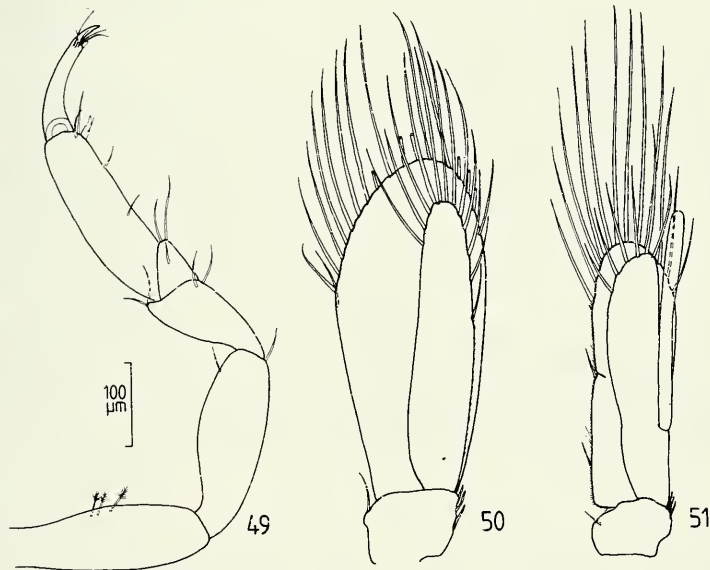
Preparatory ♂. — In general habitus similar to other non-reproductive adults. Total length 3.1 mm. Eyes enlarged, darkly pigmented. Setation of telson quite similar to other developmental stages.

Antenna 1 with 10-articulated, elongate flagellum; penultimate article with single aesthetasc and a simple seta; terminal article bearing 2 aesthetascs and 3 simple setae. Pereopod 1 more slender than in other non-reproductive adults; tubercle of propodal palm and posterodistal margin of carpus with short fringe of scales.

♂. — Habitus similar to immature specimens. Total length 4.6 mm. Eyes larger than in preparatory ♂. Cephalon, pereonites, pleonites and uropodal exopodite with irregular pigment reticulations.

Flagellum of antenna 1 with 10 articles; articles 2-9 bearing whorl of aesthetascs. Antenna 2 more slender than in immature specimens; setose flagellum biarticulate. Pereopod 1 in outline quite similar to preparatory ♂, mesial surface of propodus with 24 curved spines. Pereopods 2-7 more slender than in immature specimens. Pleopod 1, slender endopodite with 12, operculiform exopodite with 18 plumose marginal setae (drawn as simple setae); sympodite with 3 retinaculae. Both rami of pleopod 2 relatively slender, endopodite slightly shorter than exopodite; appendix masculina slender, articulating in proximal third, extending with about 1/5 of its entire length beyond distal margin of endopodite; distal margin of endopodite with 5-6, of exopodite with 12 plumose marginal setae (drawn as simple setae); sympodite with 3 retinaculae.

Postmanca and manca. — In general habitus similar to non-reproductive adults. Total length 2.9-3.4 and 1.8-2.1 mm, respectively.



FIGS 49-51.

Amakusanthura signata (Menzies & Glynn, 1968), ♂: 49) pereopod 2; 50) pleopod 1; 51) pleopod 2.

Remarks. – In its general habitus *A. signata* resembles *Amakusanthura geminsula* Kensley, 1982, which is known from Belize, Jamaica and Martinique (see Kensley & Schotte, 1989: 18; Müller, 1991: 741). The former is easily distinguishable from the latter by the presence of chromatophores on cephalon, pereonites and pleon. Moreover, the pleonites 1-3 of *A. geminsula* are not demarked by dorsal folds. The telson of *geminsula* bears only one pair of seta on the distal, dorsolateral surface and the uropodal exopodite has only a shallow distal concavity.

Amakusanthura signata has a vertical distribution ranging from the intertidal to 27 m, where it has been more often found associated with coral rubble.

Distribution. – Cuba, Puerto Rico, Belize (Kensley & Schotte, 1989: 23). The colombian records considerably extend the known range of this species southward to the northern coast of South America.

Amakusanthura tengo n. sp. (Figs 52-79)

H o l o t y p e. – Non-reproductive adult (MHNG); Bahia de Chengue, about 15 km north-east of Santa Marta; coral rubble, 7-8 m, 27 September 1985.

P a r a t y p e s. – Bahia Concha, about 10 km north-east of Santa Marta: 1 manca (MHNG); *Thalassia*, 1 m, 27 June 1985. 1 non-reproductive adult (MHNG); *Thalassia*, 0.5-3 m, 9 September 1985. 2 non-reproductive adults, 1 postmanca, 2 mancas (MHNH); *Thalassia*, 5 l substratum, 2-4 m, 2 October 1985. 11 non-reproductive adults (1 preparatory ♂), 7 postmancas (Coll. Müller); *Thalassia*, 2-3 m, 7 December 1985. 1 non-reproductive adult (MHNG); coralline algae in *Thalassia* bed, 2-3 m, 7 January 1986. 7 non-reproductive adults, 1 postmanca, 2 mancas (MHNG); *Thalassia* with coralline algae, 1.5-2 m, 12 February 1986. 10 non-reproductive adults, 2 ♂♂, 2 postmancas, 3 mancas (Coll. Müller); *Thalassia* with coralline algae, 1.5-2 m, 3 March 1986. 8 non-reproductive adults, 1 postmanca, 3 mancas (MHNG); *Thalassia*, 1-2 m, 2 April 1986. 3 non-reproductive adults, 2 postmancas, 1 manca (INVEMAR); *Thalassia*, 2-3 m, 2 May 1986.

Bahia de Chengue, about 15 km north-east of Santa Marta: 2 postmancas (MHNG); *Thalassia*, 0.5-1 m, 8 September 1985. 1 non-reproductive adult (MHNG), 1 non-reproductive adult (Coll. Müller); collected together with holotype. 8 non-reproductive adults (2 preparatory ♂♂), 2 mancas (MHNG); *Thalassia*, 1 m, 1 November 1985. 13 non-reproductive adults, 1 ♂, 5 postmancas, 1 manca (MHNG); under rocks, 0.5 m, 4 April 1986. 5 non-reproductive adults (1 preparatory ♂), 1 postmanca (Coll. Müller); from *Halimeda* on reef-flat, lower intertidal, 14 April 1986.

Bahia de Nenguangue, about 25 km north-east of Santa Marta: 1 non-reproductive adult, 1 postmanca, 1 manca (MHNG); from brown algae on rocky shore, intertidal, 30 July 1985. 2 non-reproductive adults (Coll. Müller); Playa del muerto; *Thalassia* with hydroids and brown algae, 30 July 1985.

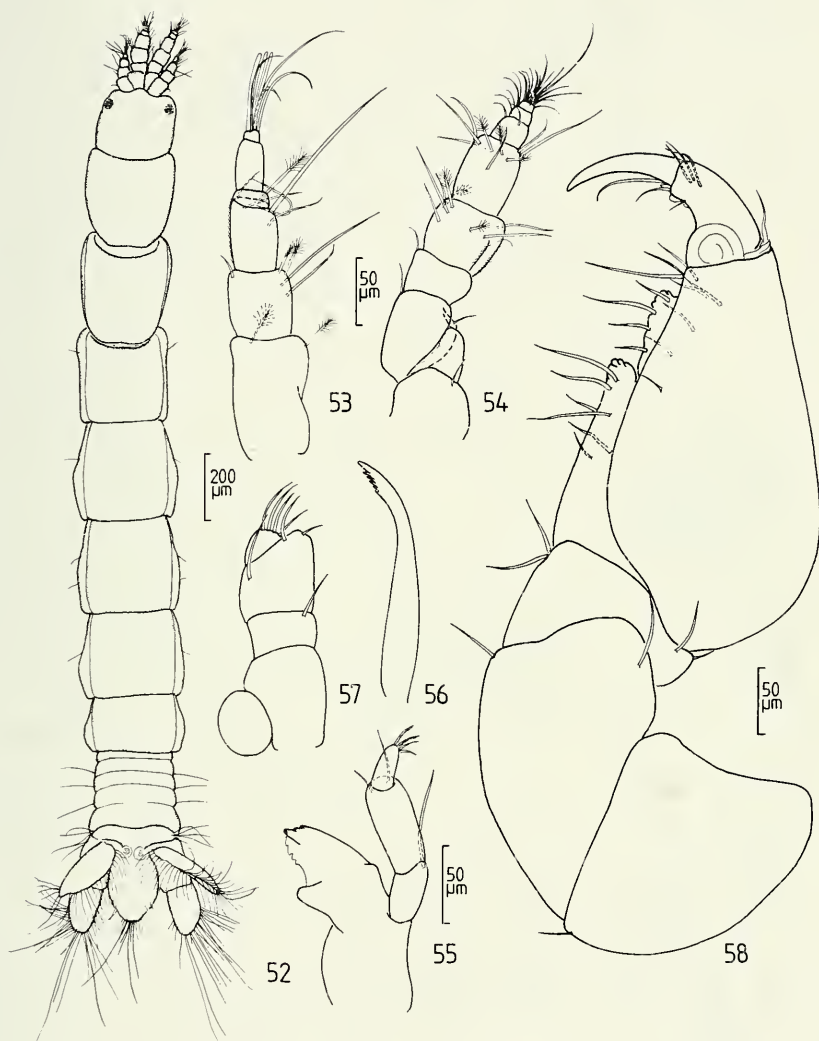
Bahia de Cinto, about 30 km north-east of Santa Marta: 2 non-reproductive adults, 1 postmanca (Coll. Müller); under stones, 0.5 m, 14 April 1986.

Bahia de Guachaquita, about 35 km north-east of Santa Marta: 7 non-reproductive adults, 2 postmancas, 2 mancas (Coll. Müller); coral rubble, 13 m, 28 February 1986.

Arrecifes near Cañaverales, about 40 km north-east of Santa Marta: 4 non-reproductive adults (Coll. Müller); from algae, hydroids and bryozoans on rocks, 6-10 m, 26 September 1985.

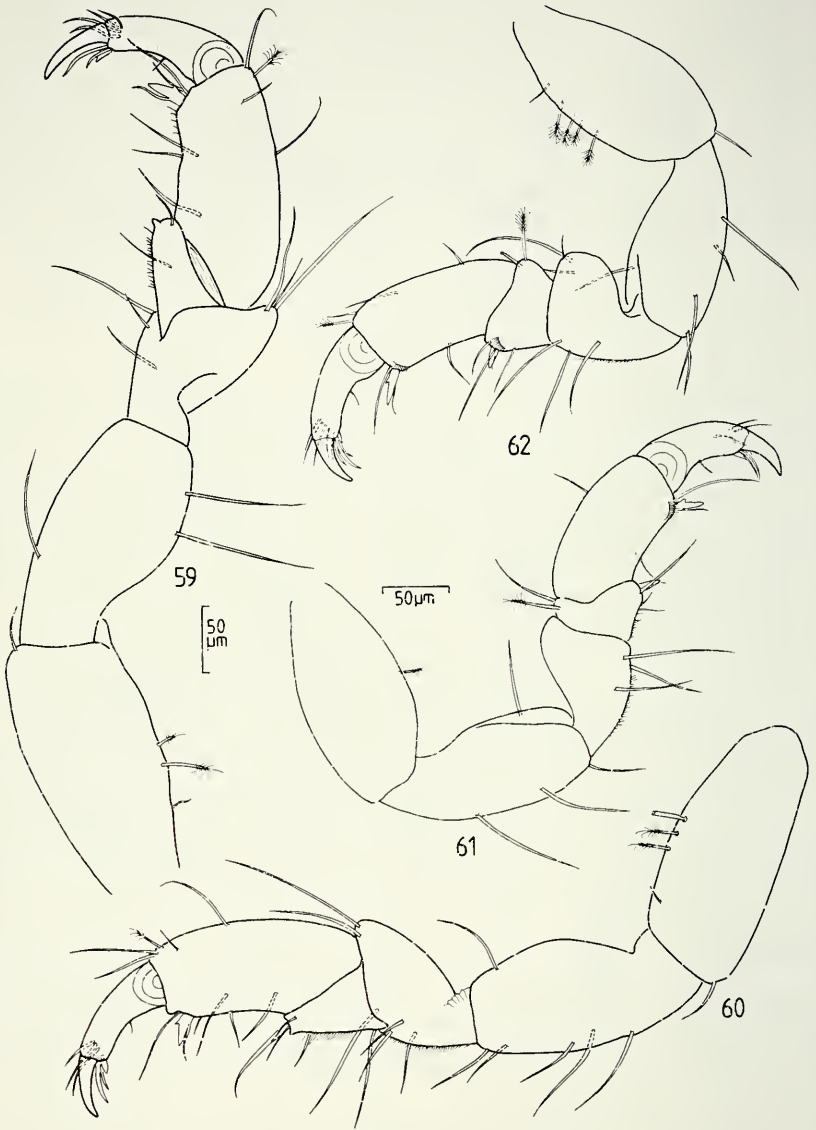
Derivatio nominis. – The specific name is an artificial combination of letters.

Description, non-reproductive adult. – Body relatively robust, 8 times longer than wide, colourless. Total length 2.4-3.6 mm. Cephalon slightly wider than long, dorsolateral eyes well pigmented, located in distal third of cephalon. Body proportions: C<1<2>3<4=5>6>7. Three anterior pleonites with dorsal suture line, incomplete line between pleonites 4 and 5. Telson tongue-shaped, with serrulate margin in distal half; dorsolateral surface of telson with 2 pairs of short setae and one pair of long setae in distal



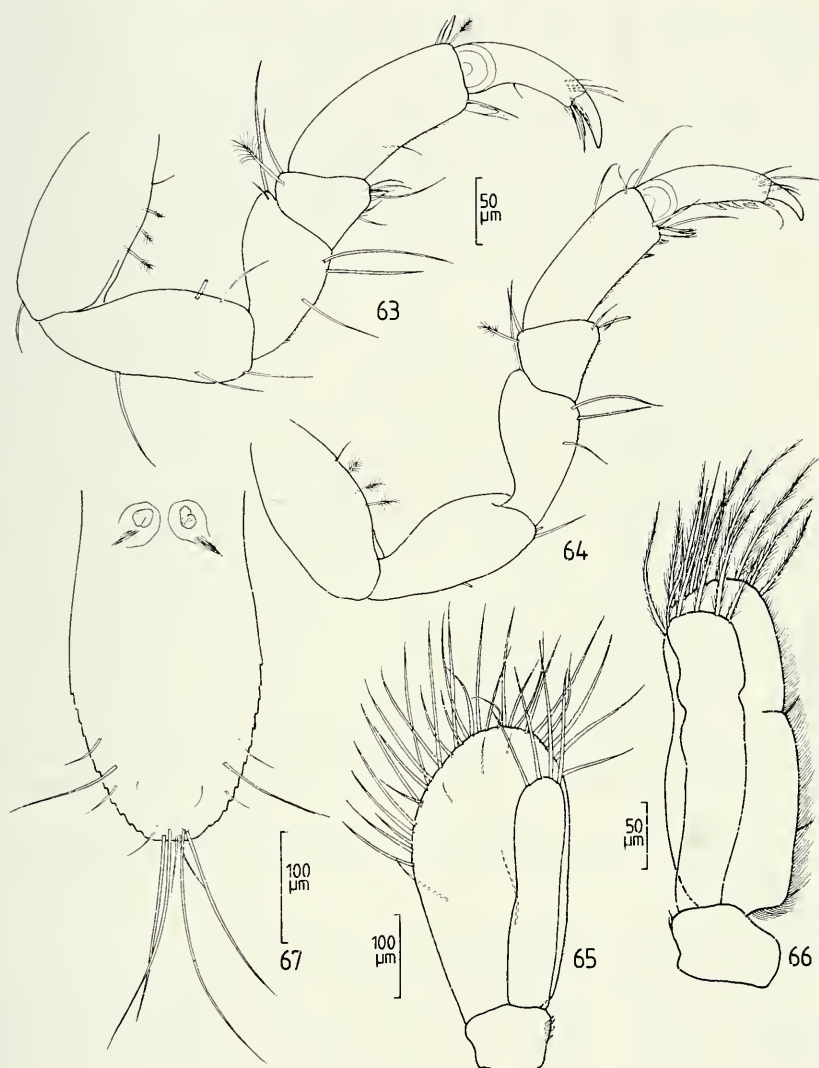
FIGS 52-58.

Amakusanthura tengo n. sp., non-reproductive adult: 52) dorsal view; 53) antenna 1; 54) antenna 2; 55) mandible; 56) maxilla; 57) maxilliped; 58) pereopod 1.



FIGS 59-62.

Amakusanthura tengo n. sp., non-reproductive adult: 59) pereopod 2; 60) pereopod 3; 61) pereopod 4; 62) pereopod 5.



FIGS 63-67.

Amakusanthura tengo n. sp., non-reproductive adult: 63) pereopod 6; 64) pereopod 7; 65) pleopod 1; 66) pleopod 2; 67) telson.

third; rounded distal margin of telson with a medial pair of short setae and 2 pairs of long setae.

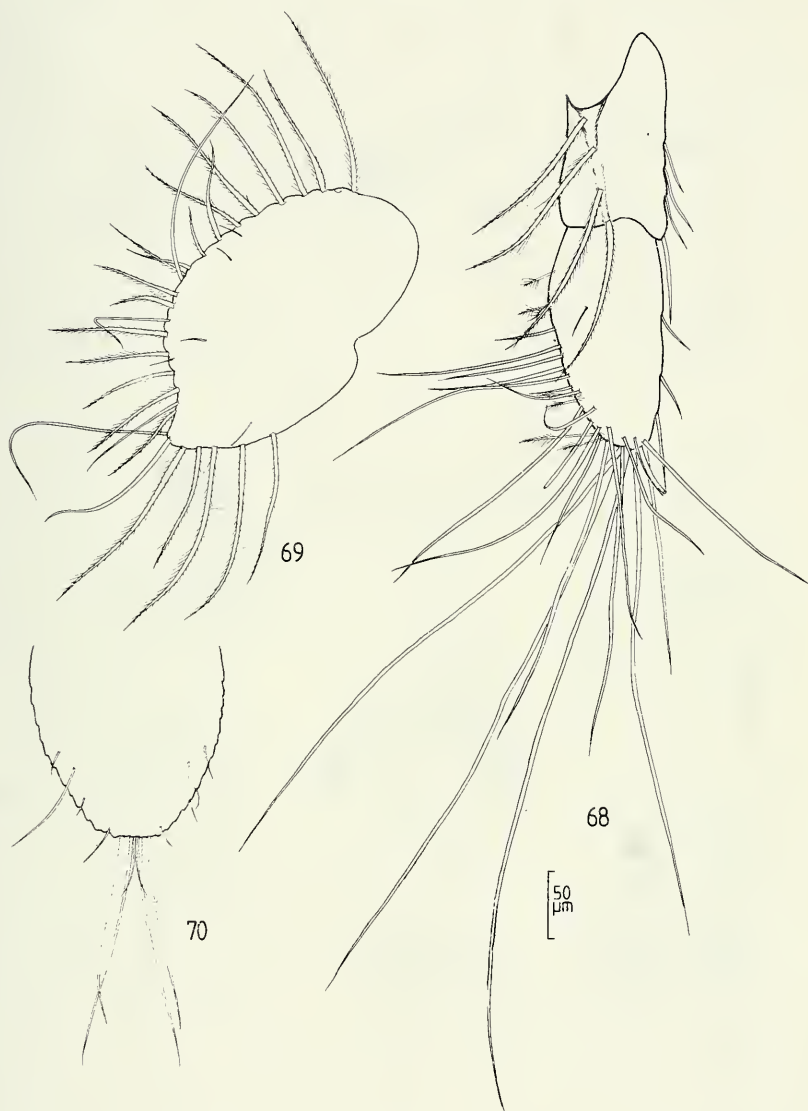
Antenna 1, peduncle 3-articulated; proximal article longest and widest; second article with 2 long, laterally directed setae at outer distal margin; third article with a long laterally directed seta in the same position; first article of 3 articulated flagellum wider than long; second flagellar article longest; small terminal article bearing 4 simple setae and 3 aesthetascs. Antenna 2 relatively robust, peduncle 5-articulated; second article slightly longer than fourth article, grooved to accommodate peduncle of antenna 1; flagellum of 3 setose articles. Incisor of mandible 3-cuspidate, lamina dentata with 4 indentations; molar process cone-shaped; second article of 3-articulated palp longest; first article with one, second with 2 setae near distal margin; terminal article bearing 4 short distal spines. Maxilla slender, medially curved in distal third, distal part 6-toothed, Maxilliped lacking endite, bearing a 3-articulated palp; first and second palp article with a seta at mediolateral margin; moreover, second article with a curved seta near outer distal margin; terminal article semi-circular, with 4 curved setae along medial margin. Propodus of pereopod 1 expanded, palm with angular projection bearing row of 4 setae; carpus elongate-triangular, distal part granular; dactylus and unguis subequal in length. Pereopods 2-7 relatively robust, similar among one another; posterior margin of propodus straight or faintly concave, bearing a robust, denticulate compound spine distally; posterodistal margin of propodus with 2 slender compound spines in pereopod 7; carpus of pereopods 2-3 triangular, lacking free anterior margin and bearing a small tubercle posterodistally; carpus of pereopods 4-7 trapezoid, posterodistal margin with small compound spine; posterodistal margin of dactylus and propodus with some scales. Pleopod 1, slender endopodite 4/5 length of operculiform exopodite; distal margin of endopodite with 4, of exopodite with 28 plumose setae (drawn as simple setae); sympodite bearing 4 retinaculae. Endopodite of pleopod 2 narrower and 9/10 length of exopodite; distal margin of endopodite with 5, of exopodite with 8 plumose setae; sympodite bearing 2 retinaculae. Uropodal endopodite somewhat longer than sympodite, bearing several long and short simple setae at outer and distal margin; most of these setae longer than endopodite; dorsal surface of endopodite, near outer and distal margin with 7 feathered sensory setae; uropodal exopodite ovate, with shallow distal concavity; margin of exopodite with several plumose and some simple setae.

Preparatory ♂. – In habitus similar to other non-reproductive adults, eyes somewhat enlarged. Total length 2.8-3.3 mm. Dorsolateral surface of telson with 6-7 pairs of short setae in distal third.

Flagellum of antenna 1 elongate, of 7 articles; penultimate article bearing one aesthetasc, terminal article with 2 aesthetascs and 3 simple setae.

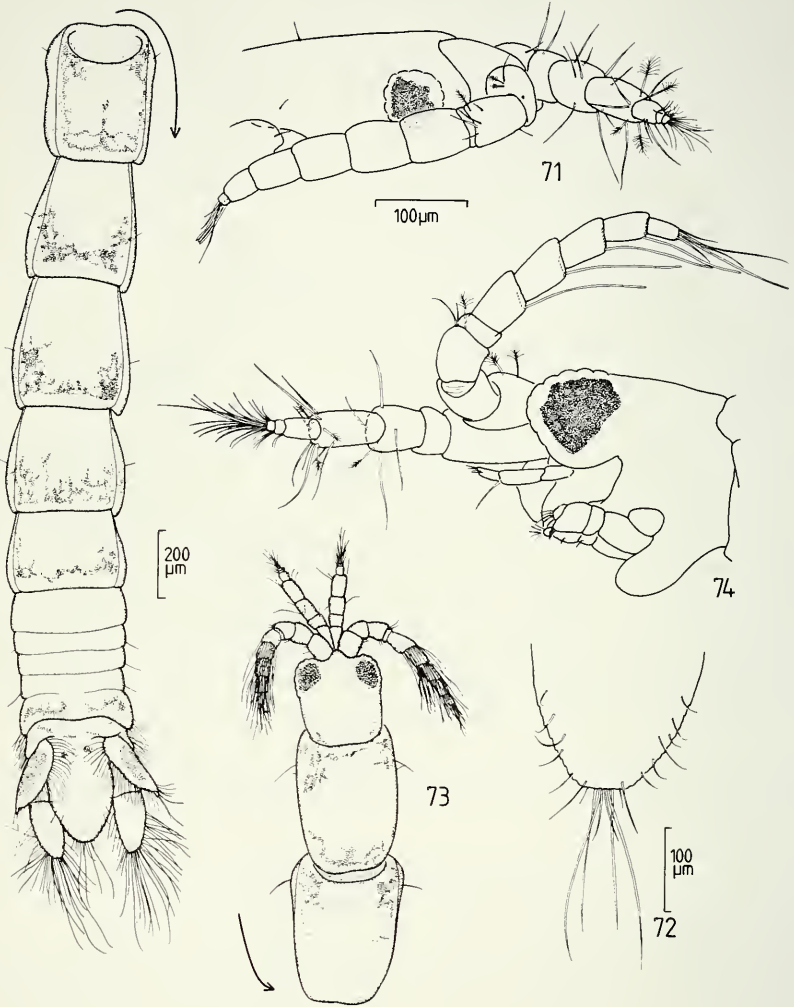
♂. – More slender than non-reproductive adults, 9.5 times longer than wide. Total length 3.4 mm. Dorsum of body with some irregular pigment reticulations. Cephalon slightly longer than wide. Dorsolateral eyes much larger than in non-reproductive adults, located in anterior half of cephalon. Cephalon ventrally, anterior of maxilliped articulation with strong, rounded tubercle. Dorsal surface of telson with several setules and 3-4 pairs of short setae in distal half.

Antenna 1 with 6 flagellar articles; articles 2-5 bearing whorl of filiform aesthetascs. Pereopods generally more slender than in immature specimens; propodus of pereopod 1 with distinct palmar tubercle at about midlength, bearing fringe of scales; mesial surface of that propodus with about 25 curved setae; carpus triangular, not elongate distally. Posterodistal margin of propodus in pereopods 2-6 with finely denticulate compound spine. Pleopod 1, slender endopodite 4/5 length of operculiform exopodite; distal margin of endopodite with 9, of exopodite with 28 plumose setae (drawn as simple setae);



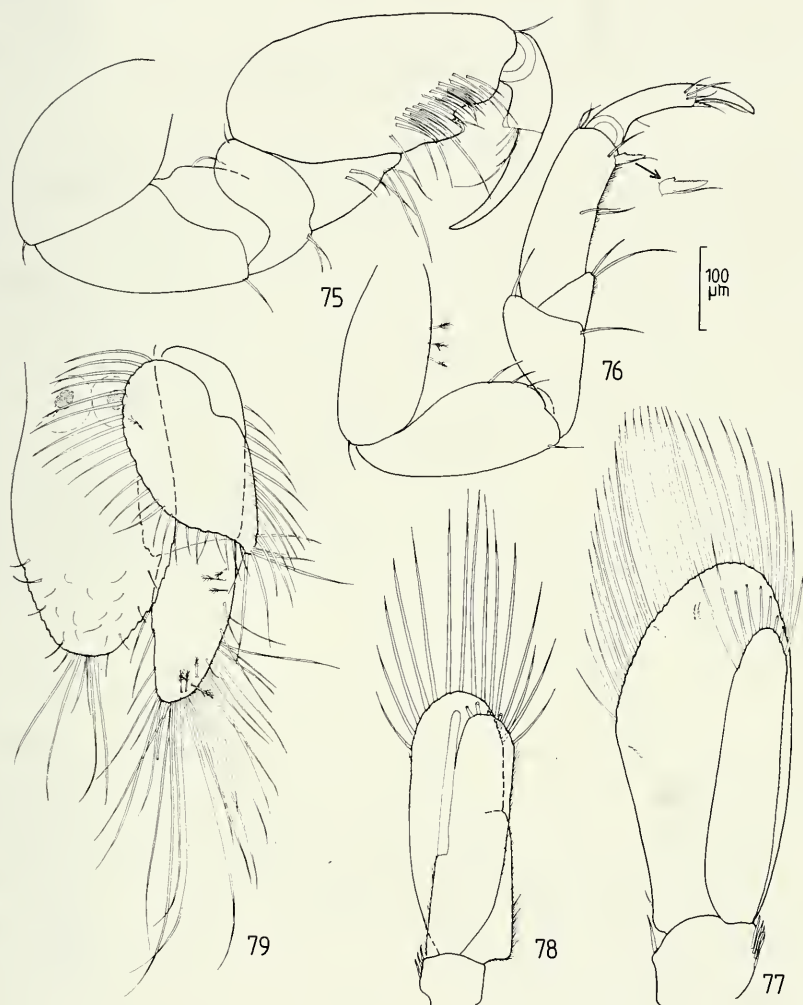
FIGS 68-70.

Amakusanthura tengo n. sp. – Non-reproductive adult: 68) uropodal sympodite and endopodite; 69) uropodal exopodite. Postmanca: 70) distal half of telson.



Figs 71-74.

Amakusanthura tengo n. sp. – Preparatory ♂: 71) cephalon and antennae in lateral view; 72) distal half of telson. ♂: 73) dorsal view; 74) cephalon and antennae in lateral view.



FIGS 75-79.

Amakusanithura tengo n. sp., ♂: 75) pereopod 1; 76) pereopod 2; 77) pleopod 1; 78) pleopod 2; 79) telson and right uropod.

sympodite bearing 4 retinaculæ. Endopodite of pleopod 2 more slender and slightly shorter than exopodite; narrow appendix masculina articulating in proximal half, reaching to distal margin of endopodite; distal margin of endopodite with 6, of exopodite with 13 plumose setae (drawn as simple setae); sympodite with 3 retinaculæ. Uropods quite similar to non-reproductive adult.

Postmanca. – In general features similar to non-reproductive adults. Total length 2.1–2.4 mm. Telson dorsolaterally with 4 pairs of setae in distal third.

Manca. – Quite similar to postmanca. Total length 1.6–1.7 mm.

Remarks. – *Amakusanthura tango* is very similar to *Amakusanthura lathridia* (Wägele, 1982), which is known only from the holotype, a non-reproductive adult from Cuba. Though being almost identical in their habitus, some other features indicate that both might be sibling species. The following characters of *A. lathridia* serve to distinguish this species from *A. tango*: Terminal article of mandibular palp with only 3 short spines. Dorsolateral surface of telson with 5 pairs of setae in distal third. Both rami of pleopod 1 more slender, with different number of setae. Compound spine of posterior propodal margin in pereopods 2–6 with more than one denticle (Only one denticle in the new species). Most setae of the uropodal endopodite much shorter than in *A. tango* (see Wägele, 1982: 44). Unfortunately the ♂ of *A. lathridia* is unknown, which does not allow a more detailed comparison with the colombian species.

Amakusanthura tango has no particular substrate preference. It was common in *Thalassia* beds and in dead coral substratum. The vertical distribution ranges from the intertidal to 13 m. It should be noted that none of the specimens has been collected west of Bahía Concha, though this area has also been studied extensively. Therefore it is supposed that *A. tango* does not occur at the coastline ranging from the airport of Santa Marta in the West to Punta Aguja in the East.

Distribution. – Caribbean Sea of Colombia.

Amakusanthura vermiformis n. sp. (Figs 80–98).

H o l o t y p e. – Non-reproductive adult (MHNG); Isla Morrito de Santa Marta; coral rubble, 30 m, 18 February 1986.

P a r a t y p e s. – 1 non-reproductive adult (Coll. Müller); collected together with holotype.

Santa Marta, Punta de Betín: 1 ♀ (Coll. Müller); coral rubble, 15–20 m, 27 November 1985. 2 mancas (Coll. Müller); sand bottom, partly covered with coral rubble, 5–6 m, 14 March 1986.

Isla Morro Grande de Santa Marta: 1 non-reproductive adult (INVEMAR); coral rubble covered with hydroids and bryozoans, 30 m, 19 March 1986.

Punta Ancón near Taganga, about 5 km east of Santa Marta: 2 non-reproductive adults (MHNG); coral rubble, 15 m, 2 August 1985.

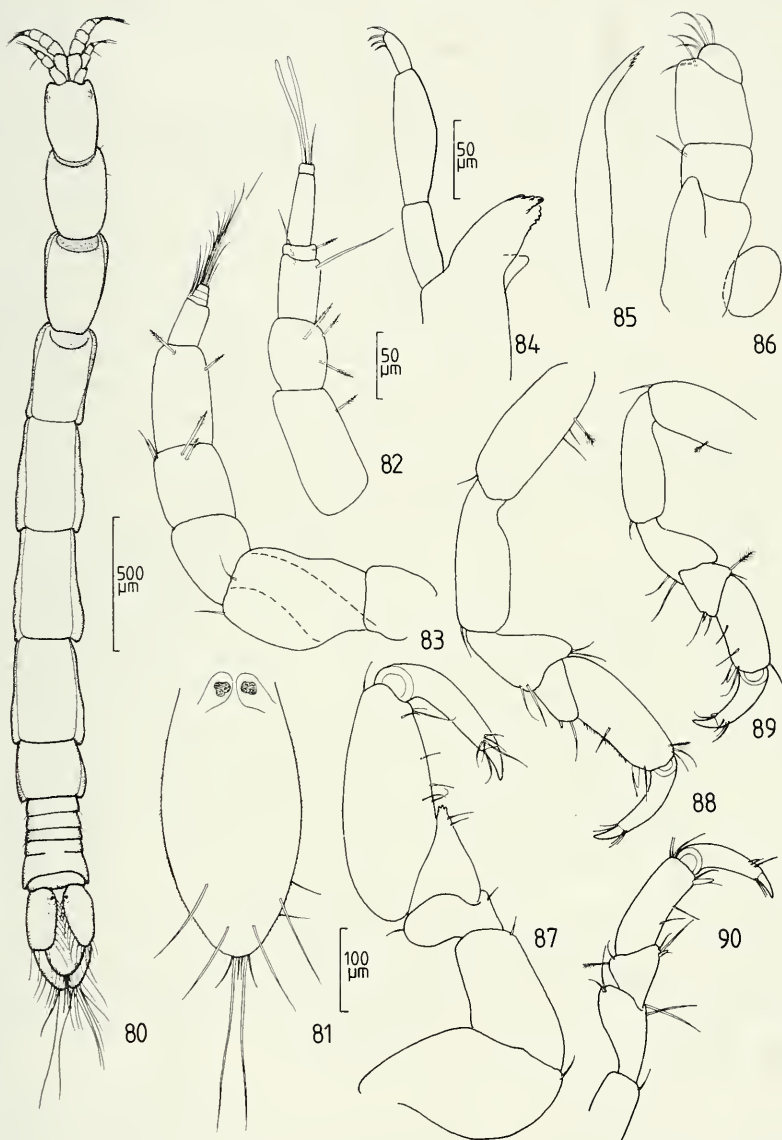
Punta Aguja, about 5 km north-east of Santa Marta: 1 non-reproductive adult (MNHN); coral rubble, 16–18 m, 16 September 1985.

Bahía de Chengue, about 15 km north-east of Santa Marta: 1 postmanca (MHNG); under rocks, 0.5 m, 4 April 1986.

Bahía de Cinto, about 30 km north-east of Santa Marta: 3 mancas (MHNG); *Syringodium*, 3 m, 20 December 1985.

Derivatio nominis. – The specific name refers to the slender, wormlike habitus of the new species.

Description, non-reproductive adult. – Body slender, 12 times longer than wide. Total length 2.3–2.6 mm. Body colourless or with some minute pigment spots on pereonites.



FIGS 80-90.

Amakusanthura vermiformis n. sp., non-reproductive adult: 80) dorsal view; 81) telson; 82) antenna 1; 83) antenna 2; 84) mandible; 85) maxilla; 86) maxilliped; 87) pereopod 1; 88) pereopod 2; 89) pereopod 4; 90) distal part of pereopod 6.

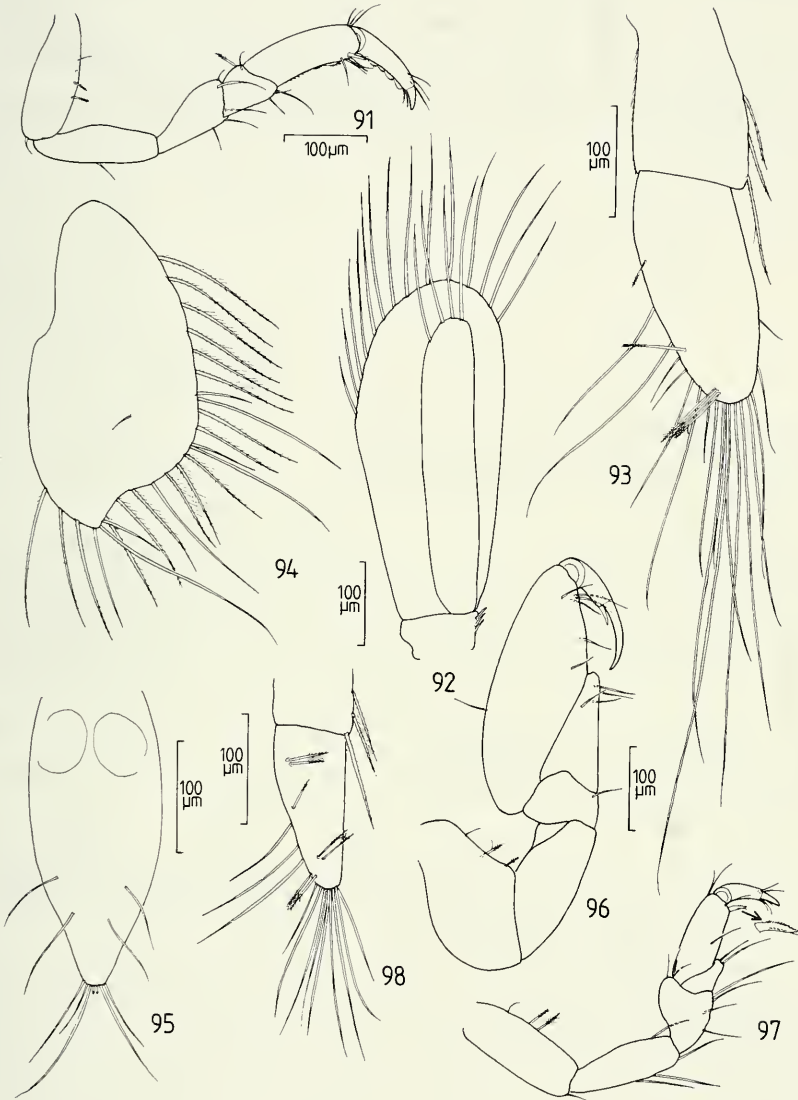
Cephalon 1.6 times longer than wide, with small, moderately pigmented eyes in distal third. Body proportions: $C < 1 < 2 = 3 < 4 = 5 > 6 > 7$. Pleonites 1-3 with distinct suture line; suture line of pleonite 4 indicated laterally. Telson tongue-shaped, narrowly rounded apex with 4 short setae and a pair of long simple setae; dorsolateral surface of telson in distal third with 2 pairs of relatively long simple setae.

Antenna 1, peduncle 3-articulated, with second article shortest and proximal article longest; third peduncular article with a longer, laterally directed seta; flagellum 3-articulated; first article shortest and widest, second article longest; small terminal article bearing short simple seta and 2 aesthetascs. Antenna 2, peduncle 5-articulated; second article longest, 1.4 times longer than wide, grooved to accommodate peduncle of antenna 1; flagellum of 4 setose articles; proximal article longer than other flagellar articles together. Incisor of mandible 3-cuspidate, lamina dentata with 5 indentations; molar cone-shaped; second article of 3-articulated palp longest; terminal article smallest, bearing 4 short spines in distal third. Maxilla slender, medially curved in distal third, distal part 5-toothed. Maxilliped with a short, non-setose endite, not extending beyond proximal half of first palp article; palp of 3 articles; first article mediolaterally with single seta, second article with 2 simple setae; semicircular terminal article bearing 5 curved setae at mediolateral margin. Propodus of pereopod 1 expanded, elongate-ovate; palm almost straight and lacking tubercle, bearing only some short setae; unguis about 1/3 length of dactylus; carpus triangular, posterodistal margin with 2 short setae and three small denticles. Pereopods 2-7 in shape and size similar among one another; posterior margin of propodus straight or faintly concave, bearing a short compound spine distally; moreover, posterodistal margin of pereopod 7 with two more slender compound spines; carpus of pereopods 2-3 triangular, lacking free anterior margin; carpus of pereopods 4-7 trapezoid, with free anterior margin and short compound spine at posterodistal margin; posterior margin of dactylus in pereopod 7 with row of scales. Pleopod 1, endopodite slender, 9/10 length of operculiform exopodite; endopodite with 4, exopodite with 14 distal, plumose marginal setae (drawn as simple setae); sympodite with 3 retinaculae. Sympodite and endopodite of uropod subequal in length; endopodite relatively slender, ovate, somewhat extending beyond distal margin of telson; outer and distal margin of endopodite with several short and long setae; dorsal surface, near outer and distal margin bearing 5 feathered sensory setae. Uropodal exopodite roughly ovate, with shallow concavity at outer distal margin; exopodite with some simple and several plumose setae at outer and distal margin.

♀. – In general features as non-reproductive adult. Total length 3.6 mm.

Postmanca and manca. – In their features quite similar to non-reproductive adult and ♀. Total length 2.1 and 2.0-2.2 mm, respectively. Distal margin of telson in manca more slender than in non-reproductive adult. Pereopod 1 of manca lacking denticles at distal margin of carpus. Pereopods 2-7 more robust than in non-reproductive adult. Uropodal endopodite of manca more slender than in adult specimens.

Remarks. – *Amakusanthura vermiformis* n. sp. is most closely allied with *Amakusanthura cracenta* (Kensley, 1984), which is known from Belize and the Turks and Caicos Islands. Some adult paratype specimens of this species have been available for comparison (USNM-registration number 211220). It became obvious, in contrast to the original description, that *Amakusanthura cracenta* has the three anterior pleonites with a distinct dorsal suture line and an incomplete line between pleonites 4 and 5. This feature is characteristic for *Amakusanthura* Nunomura, 1977. According to this definition *A. cracens* has to be transferred from *Apanthura* to *Amakusanthura*. Though *A. vermiformis* and *cracenta* are very similar in their habitus, some characters allow an easy distinction of



FIGS 91-98.

Amakusanthura vermiformis n. sp. – Non-reproductive adult: 91) pereopod 7; 92) pleopod 1; 93) uropodal sympodite and endopodite; 94) uropodal exopodite. Manca; 95) telson; 96) pereopod 1; 97) pereopod 2) 98) uropodal endopodite and distal part of sympodite.

both species. The propodal palm of the pereopod 1 in *A. cracentia* has a strong tooth-shaped tubercle and the carpus is produced into a narrow, tooth-shaped posterodistal process. Moreover, the uropodal exopodite of *cracentia* has a deep distal concavity (see Kensley, 1984: 14-15, figs 9-10). In contrast to these features, neither the propodus nor the carpus of pereopod 1 of *A. vermiformis* bear a tooth-shaped tubercle or process. Also, the uropodal exopodite has only a shallow concavity at the outer distal margin.

Though collected in low number, *A. vermiformis* was found at several locations in the Santa Marta area, more often associated with coral rubble. Its vertical distribution ranges from 0.5-30 m.

Distribution. – Caribbean Sea of Colombia.

CORTEZURA Schultz, 1977

Cortezura confixa (Kensley, 1978) (Figs 99-116)

Venezanthura confixa Kensley, 1978: 782-785, figs 5-6.

Venezanthura confixa; Carvacho, 1983: 312.

Venezanthura confixa; Negoescu & Wägele, 1983: 135.

Cortezura confixa; Kensley & Schotte, 1989: 31, fig. 10.

Material. – Bahia de Santa Marta: 8 ♂♂, 17 non-reproductive adults (Coll. Müller), 5 non-reproductive adults (INVMAR), 3 ♂♂, 2 non-reproductive adults (MHNG), 1 ♂, 4 non-reproductive adults (MNHN); dredged on sand bottom, 5-10 m, leg. B. Werding, March 1980.

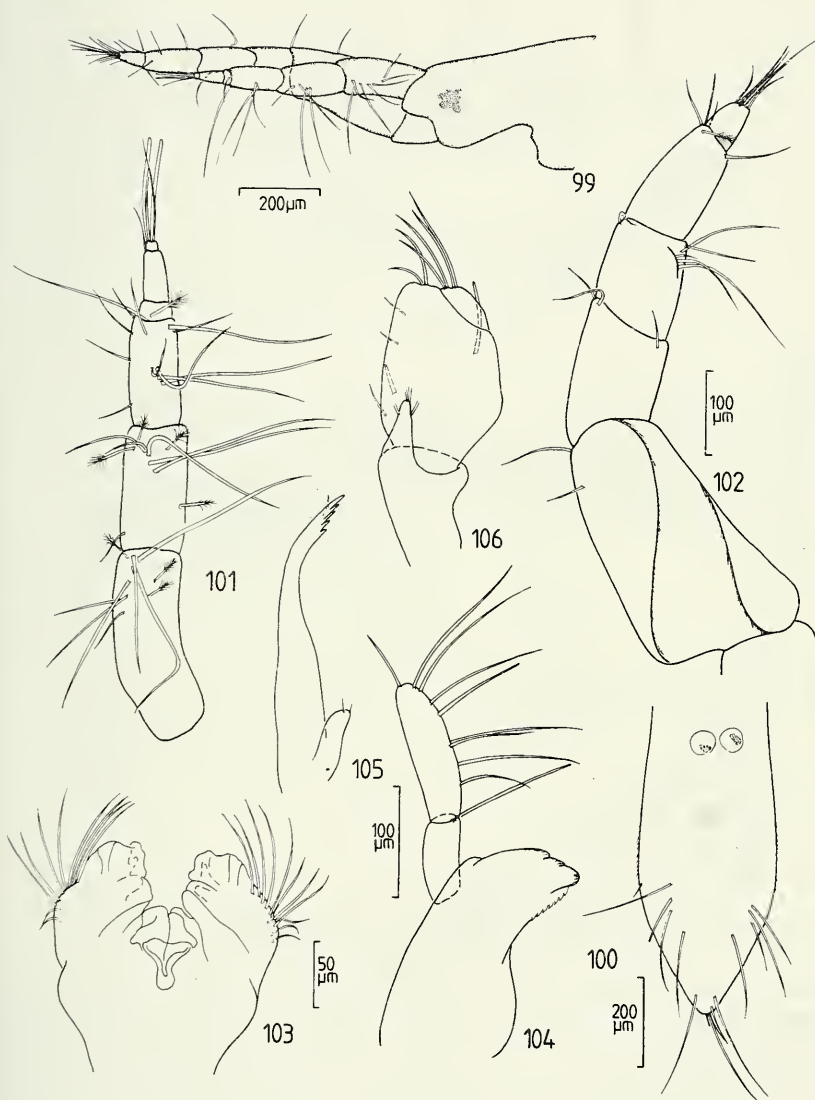
Bahia de Chengue, about 15 km north-east of Santa Marta: 1 non-reproductive adult (MHNG); from sand bottom, 5 m, leg. L.E.-Velasquez, 4 September 1985. 1 non-reproductive adult, 1 postmanca (Coll. Müller); sand bottom in *Halophila* bed, 5 m, leg. L.E.-Velasquez, 6 September 1985.

Bahia de Cinto, about 30 km north-east of Santa Marta: 1 non-reproductive adult (Coll. Müller); on sand bottom, 2-3 m, 19 September 1985.

Arrecifes near Cañaverales, about 40 km north-east of Santa Marta: 1 non-reproductive adult (Coll. Müller); sand bottom in *Syringodium* bed, 1.5-2 m, 25 February 1986.

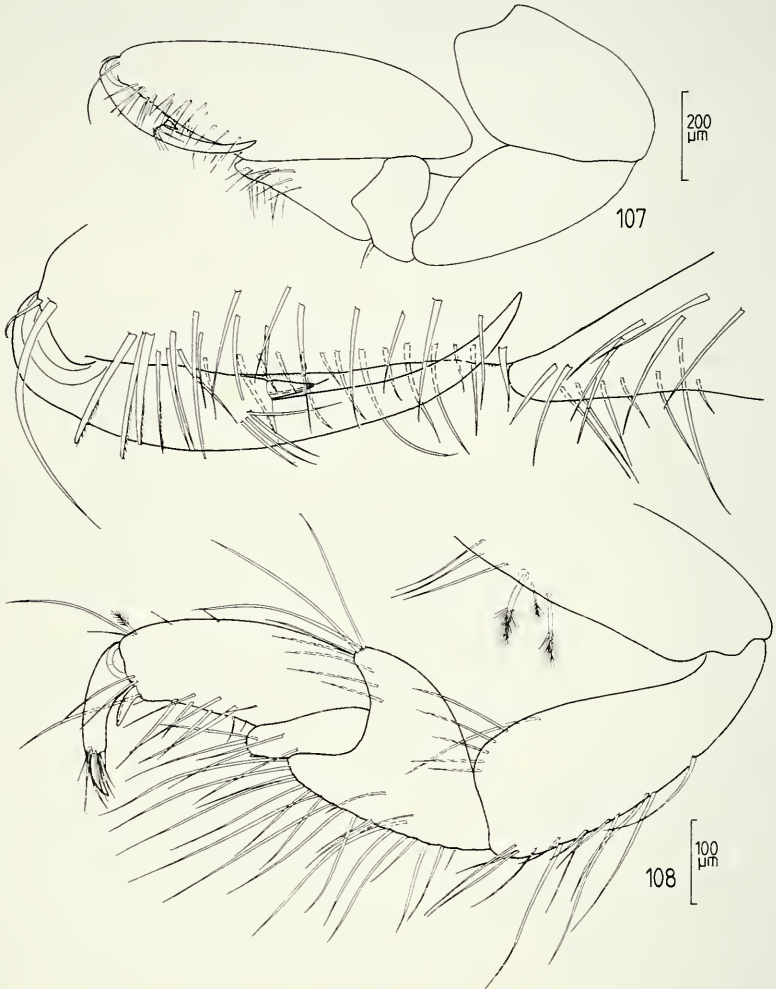
Additional description, non-reproductive adult. – Cephalon with small, weakly pigmented lateral eyes, located in distal third. Telson raised middorsally; dorsolateral surface of telson with 5 pairs of slender, simple setae in distal half; distal margin of telson narrowly rounded, with 3 pairs of simple setae.

Antenna 1, all three peduncular articles with some long, ventrally and laterally directed setae; flagellum 3-articulated, first article wider than long; second article slender, longest; minute terminal article with 3 simple setae and 2 aesthetascs. Antenna 2 with 5-articulated peduncle; second article much larger than others, grooved to accommodate peduncle of antenna 1; flagellum unarticulate, with some distal simple setae. Lateral lobes of hypopharynx broad, with row of 10-11 curved simple setae. Incisor of mandible 3-cuspidate, lamina dentata with 7 indentations; mandibular palp biarticulate, short proximal article with a long simple seta distally; second article twice length of first articles, bearing 9 long simple setae. Maxilla slender, medially curved in distal third, with 5 distal teeth and a short seta between third and fourth tooth. Maxilliped with elongate-triangular, setulose endite; palp biarticulate; proximal article very large, mediolateral margin with 2 curved setae; second article flat, much wider than long, bearing 4 curved setae at mediolateral margin. Propodus of pereopod 1 greatly expanded, elongate-ovate in outline, palm without



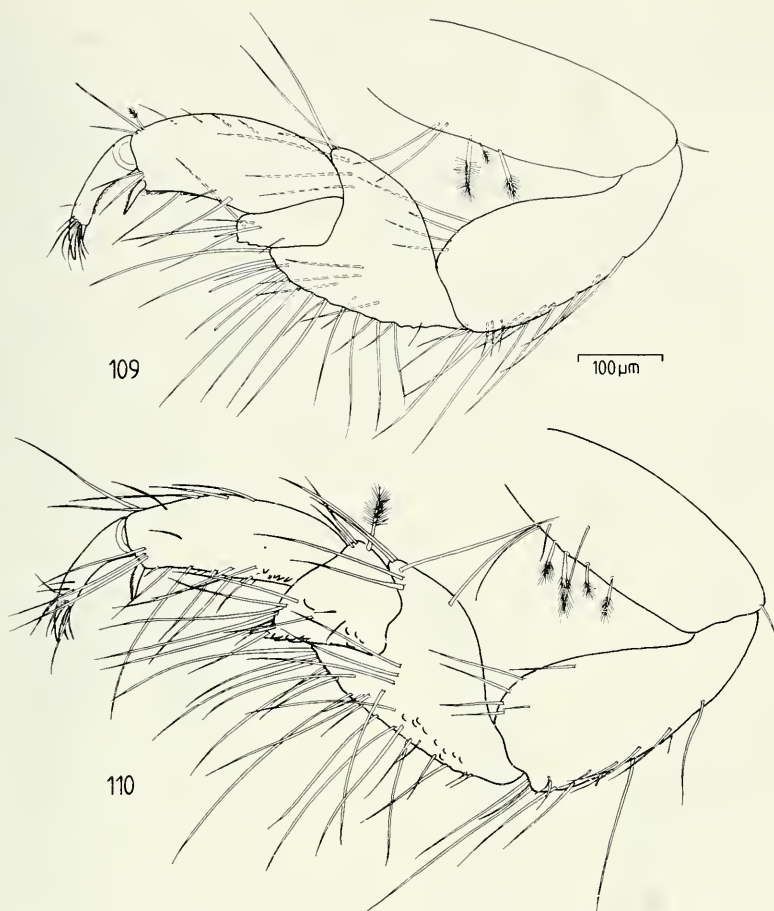
FIGS 99-106.

Cortezura confixa (Kensley, 1978), non-reproductive adult: 99) cephalon and antennae, lateral view; 100) telson; 101) antenna 1; 102) antenna 2; 103) hypopharynx; 104) mandible; 105) maxilla; 106) maxilliped.



FIGS 107-108.

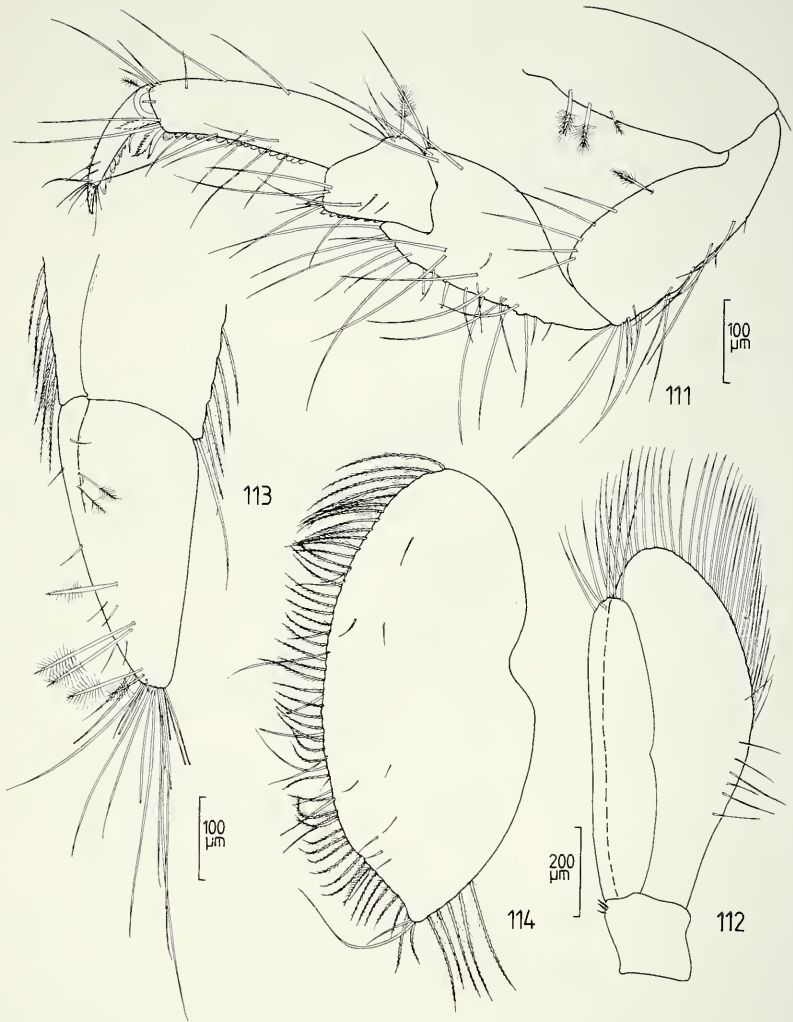
Cortezura confixa (Kensley, 1978), non-reproductive adult: 107) pereopod 1; 108) pereopod 2.



Figs 109-110.

Cortezura confixa (Kensley, 1978), non-reproductive adult: 109) pereopod 3; 110) pereopod 4.

distinct tubercle; mesial surface of propodus and elongate-triangular carpus with several curved spines in arrangement as figured; unguis long and slender, slightly longer than dactylus; dactylus with short accessory spine near articulation of unguis. Pereopods 2-7 relatively robust and similar among one another, bearing several long setae at posterior margin of propodus, carpus, merus and ischium; posterodistal margin of propodus in pereopods 2-6 with finely denticulate compound spine; propodus of pereopod 7 with 3 denticulate compound spines in that position; carpus of pereopods 2-3 short, lacking free anterior margin; trapezoid carpus of pereopods 4-7 with free anterior margin and short, non-denticulate compound spine at posterodistal margin; anterior and posterior margin of dactylus, as well as posterior margin of propodus and carpus in pereopod 7 bearing row of several scales. Pleopod 1, slender endopodite 9/10 length of operculiform exopodite; distal margin of endopodite with 6, of exopodite with 33 plumose setae (drawn as simple setae);



FIGS 111-114.

Cortezura confixa (Kensley, 1978), non-reproductive adult: 111) pereopod 7; 112) pleopod 1; 113) uropodal sympodite and endopodite; 114) uropodal exopodite.

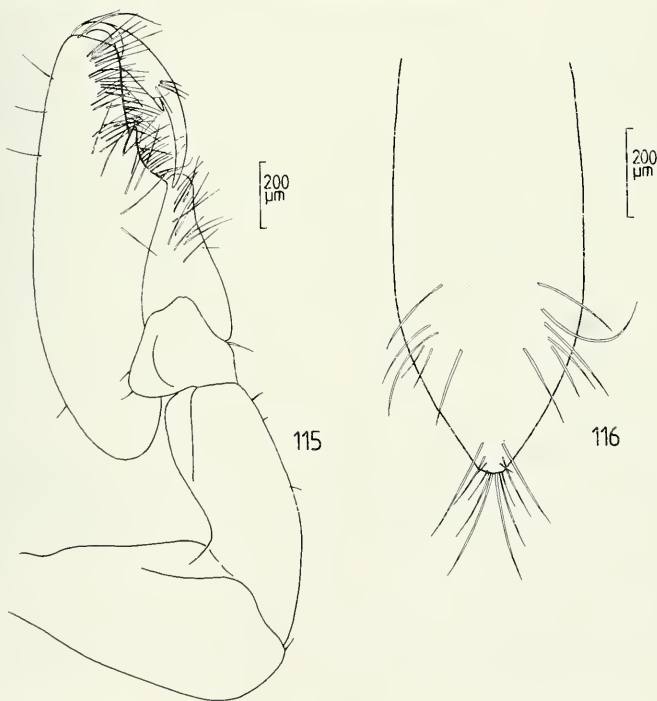
sympodite with 3 retinaculæ. Uropodal endopodite slender, roughly triangular in outline; narrowly rounded distal margin bearing several long, simple setae; dorsal surface of endopodite with 7 feathered sensory setae near outer and distal margin. Uropodal exopodite ovate, outer distal margin shallowly concave; outer and distal margin of exopodite bearing many plumose and some simple setae.

♂. – Telson with 9 pairs of dorsolateral simple setae in distal half.

Palm of pereopod 1 propodus concave, with strong toothshaped tubercle in proximal half; setae on mesial surface of propodus and carpus more numerous than in non-reproductive adult.

Remarks. – Because the original description is restricted to the ♂ holotype, some additional features are described for the non-reproductive adult specimens. The ♂ pereopod 1 and the telson are also figured in detail.

Little was known concerning the substrate preference of *Cortezura confixa*. Because all specimens taken in the Santa Marta area were found on sand bottom, it is supposed that this species is an exclusive inhabitant of that substratum. This agrees with the type locality, where the holotype was collected "in 4-10 m from sand and algal bottom" (Kensley, 1978: 785). *C. confixa* apparently is a subtidal shallow-water species. Its known vertical distribution ranges from about 2 to 10 m.



FIGS 115-116.

Cortezura confixa (Kensley, 1978), ♂: 115) pereopod 1; 116) telson.

Distribution. – The species was already recorded from the Santa Marta area (Carvacho, 1983: 312). The only other record is the type locality, Isla Cubagua in Venezuela.

MESANTHURA Barnard, 1914

Mesanthura cf. brasiliensis Koenig, 1980 (Figs 117-133)

Mesanthura brasiliensis Koenig, 1980: 357-364, fig. 1.

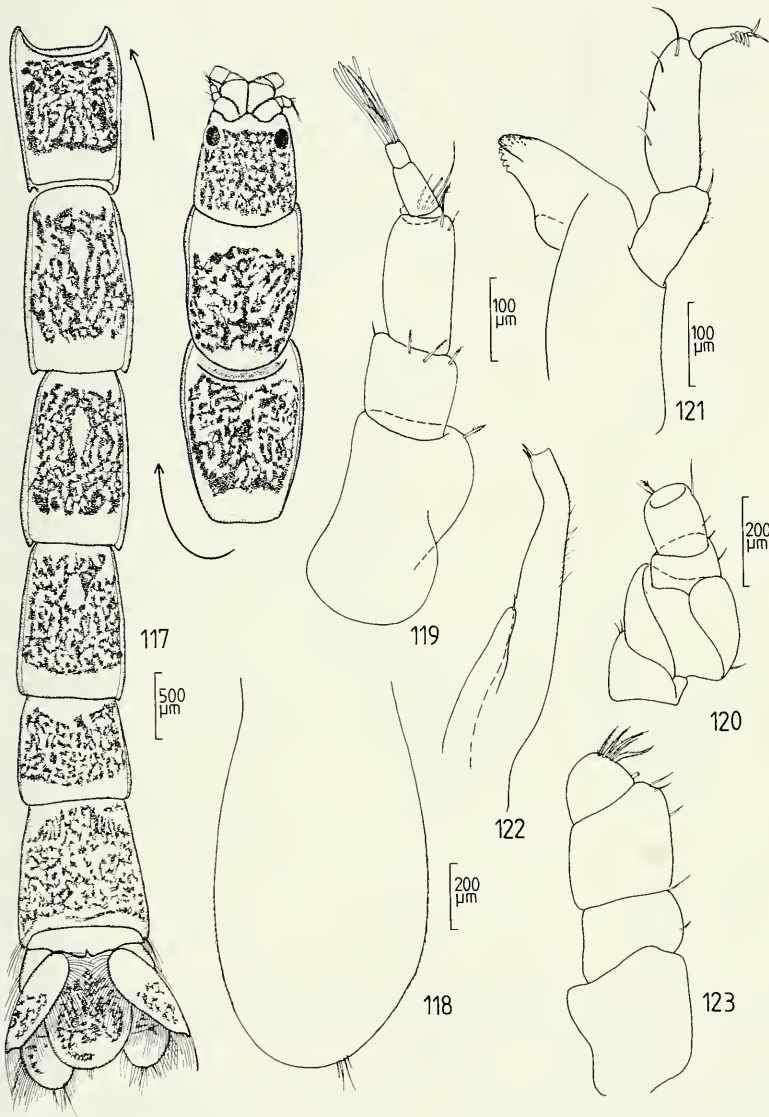
Mesanthura brasiliensis; Negoescu & Wägele, 1983: 125.

Material. – 1 non-reproductive adult (MHNG); Isla Morrito de Santa Marta; coral rubble, 30 m, 18 February 1986.

Description, non-reproductive adult. – Body relatively slender, 11 times longer than wide. Total length 10.7 mm. Dorsum of cephalon, pereonites and pleon with dense pigment reticulations and pigment spots. Dorsum of pereonites 4-6 with non-pigmented ovate central area. Cephalon slightly longer than wide, somewhat narrowing distally; dorsolateral eyes in distal third of cephalon, well pigmented. Body proportions: C<1<2>3<4>5>6>7. Telson tongue-shaped; broadly rounded distal margin with 4 short simple setae.

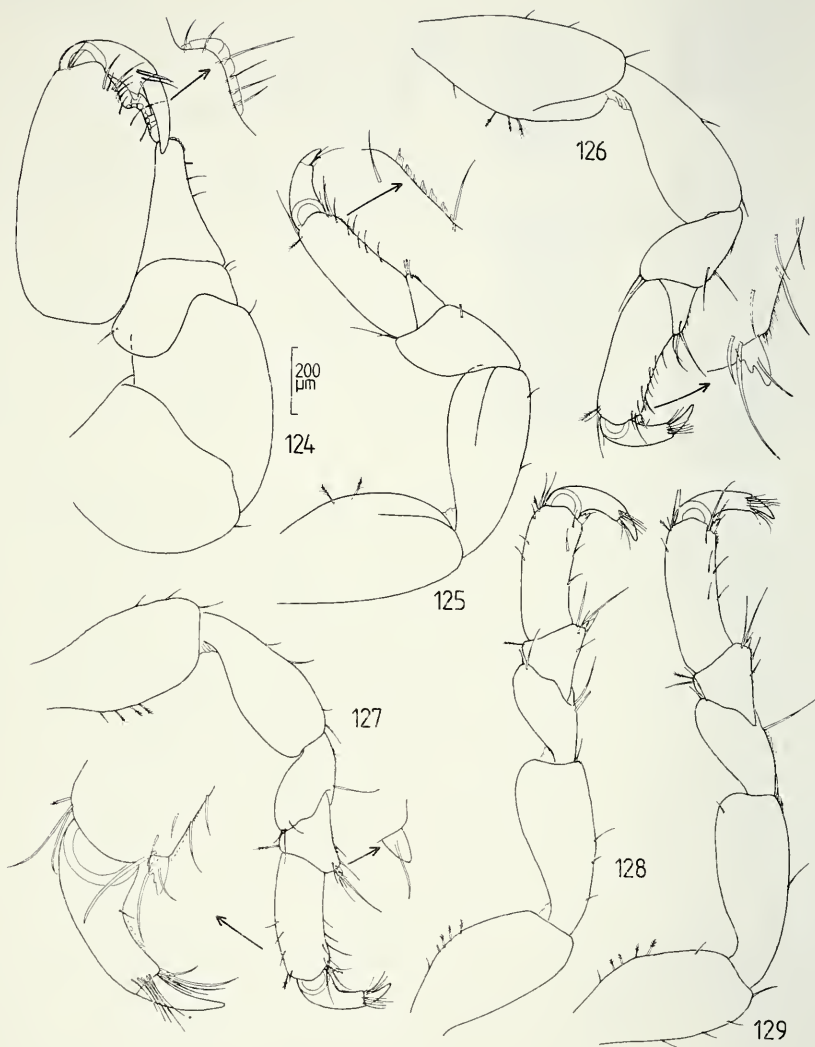
Antenna 1, peduncle 3-articulated; second article shortest, proximal article longest and widest; flagellum 3-articulated; first article much wider than long, second article longest; small terminal article with 4 simple setae and 3 aesthetascs. Antenna 2 broken off at 4th peduncular article; second article largest, about as long as wide, grooved to accommodate peduncle of antenna 1. Incisor of mandible 4-cuspidate, lamina dentata with 5 indentations; second article of 3-articulated palp longest; first article with a simple seta and second article with 4 simple setae; slender terminal article bearing 6 short spines in distal half. Maxilla elongate, distal part medially curved, apex broken off. Maxilliped lacking endite, palp 3-articulated; medial margin of first palp article with 2, of second with 3 simple setae; terminal article semioval, with 6 setae along medial margin; four of these setae plumose, proximal seta broken off at base. Pereopod 1 propodus expanded; palm with shallow tubercle in proximal half, bearing 6 simple setae and fringe of scales; mesial surface of propodus with 7 curved setae near palm; carpus roughly elongate-triangular, with distal fringe of scales. Pereopods 2-7 in shape and size similar among one another; posterodistal margin of propodus with robust, denticulate compound spine; moreover, posterodistal margin of pereopod 7 propodus with two more slender compound spines; carpus of pereopods 2-3 triangular, lacking free anterior margin; carpus of pereopods 4-7 trapezoid, with free anterior margin and short compound spine at posterodistal margin. Pleopod 1, slender endopodite slightly shorter than operculiform exopodite; endopodite with 16, exopodite with about 50 plumose setae at distal margin (drawn as simple setae); sympodite with 5 retinaculæ. Uropodal sympodite twice as long as semioval endopodite; endopodite with several plumose and simple marginal setae, all drawn as simple setae; dorsal surface near outer margin bearing 5 feathered sensory setae; uropodal exopodite roughly ovate, with shallow concavity at outer distal margin; exopodite with numerous simple and plumose marginal setae, all drawn as simple setae.

Remarks. – The single specimen from Colombia most probably is conspecific with *Mesanthura brasiliensis* Koenig, 1980, which is known only from the ♀ holotype described from Brazil. Unfortunately the original description is too short to allow a



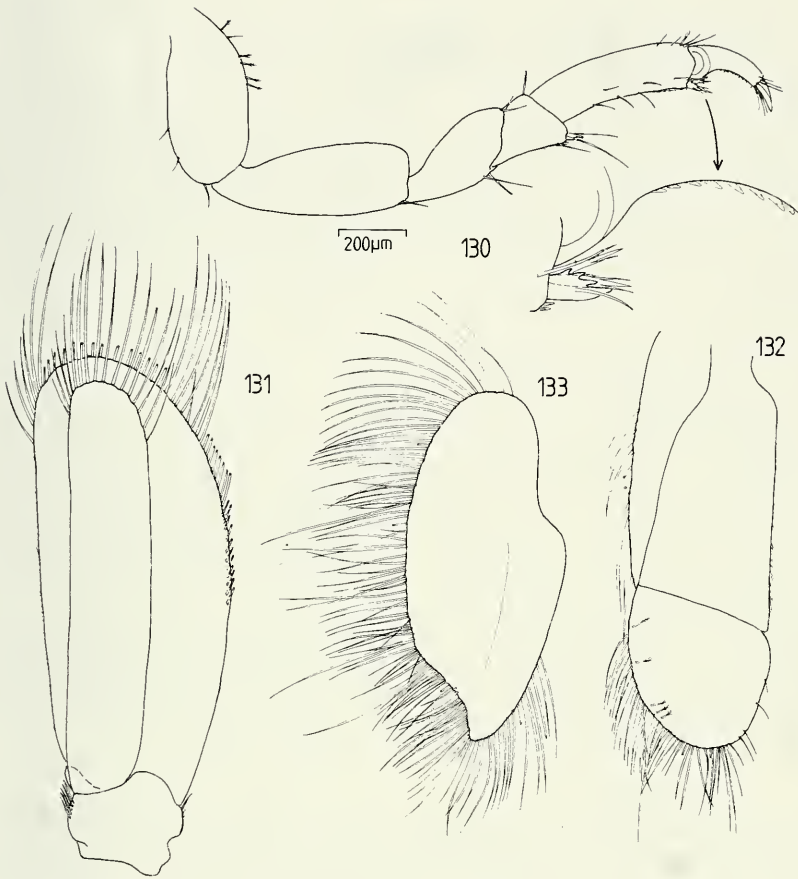
FIGS 117-123.

Mesanthura cf. brasiliensis Koenig, 1980, non-reproductive adult: 117) dorsal view; 118) telson; 119) antenna 1; 120) four proximal articles of antenna 2; 121) mandible; 122) maxilla; 123) maxilliped.



FIGS 124-129.

Mesanthura cf. brasiliensis Koenig, 1980, non-reproductive adult: 124) pereopod 1; 125) pereopod 2; 126) pereopod 3; 127) pereopod 4; 128) pereopod 5; 129) pereopod 6.



FIGS 130-133.

Mesanthura cf. brasiliensis Koenig, 1980, non-reproductive adult: 130) pereopod 7; 131) pleopod 1; 132) uropodal sympodite and endopodite; 133) uropodal exopodite.

recognition of this species with certainty and the type material was not available for comparison. The drawings of the appendages are restricted to the pereopods, which do not show any details of the spination. The outlines of the pigmentations in *M. brasiliensis* are very similar to the colombian specimen, having also non-pigmented ovate central areas at the pereonites 4-6. However, most of the pigmentations in the original description are drawn as spots, separated among one another, whereas the specimen from the Santa Marta area shows distinct pigment reticulations. Moreover, the non-reproductive adult from Colombia has only 4 short distal setae at the telsonic margin, whereas 11 short setae have been drawn in the habitus figure of *brasiliensis*. Due to these disagreements, the status of the colombian material remains uncertain.

Mesanthura hopkinsi Hooker, 1985 (Figs 134-158)

Mesanthura hopkinsi Hooker, 1985: 276-279, figs 14-15.

Mesanthura hopkinsi; Kensley & Schotte, 1989: 51, figs 18 C, 20 I-L.

Material. – Punta brava, near airport of Santa Marta: 1 manca (Coll. Müller); brown algae on rocky shore, intertidal, 1 August 1985.

Bahia de Santa Marta: 1 preparatory ♂ (Coll. Müller); pilings in the harbour of Santa Marta, from bryozoans, sponges and detritus, 27 February 1985. 1 non-reproductive adult (Coll. Müller); Punta de Betin, coral rubble, 11 m, 17 June 1985. 1 postmanca (MHNG); Punta de Betin, in detritus, 22 June 1985. 1 postmanca, 1 manca (Coll. Müller), fouling on pilings in the harbour of Santa Marta, 0.5-6 m, 3 September 1985. 1 ♂ (Coll. Müller); Punta de Betin, under stones on sand bottom, 0-1 m, 28 January 1986. 1 preparatory ♂ (MHNG); Punta de Betin, under rocks on sand bottom, 1-2 m, 4 February 1986.

Isla Morro Grande de Santa Marta: 1 non-reproductive adult (Coll. Müller); coral rubble, 30 m, 19 March 1986.

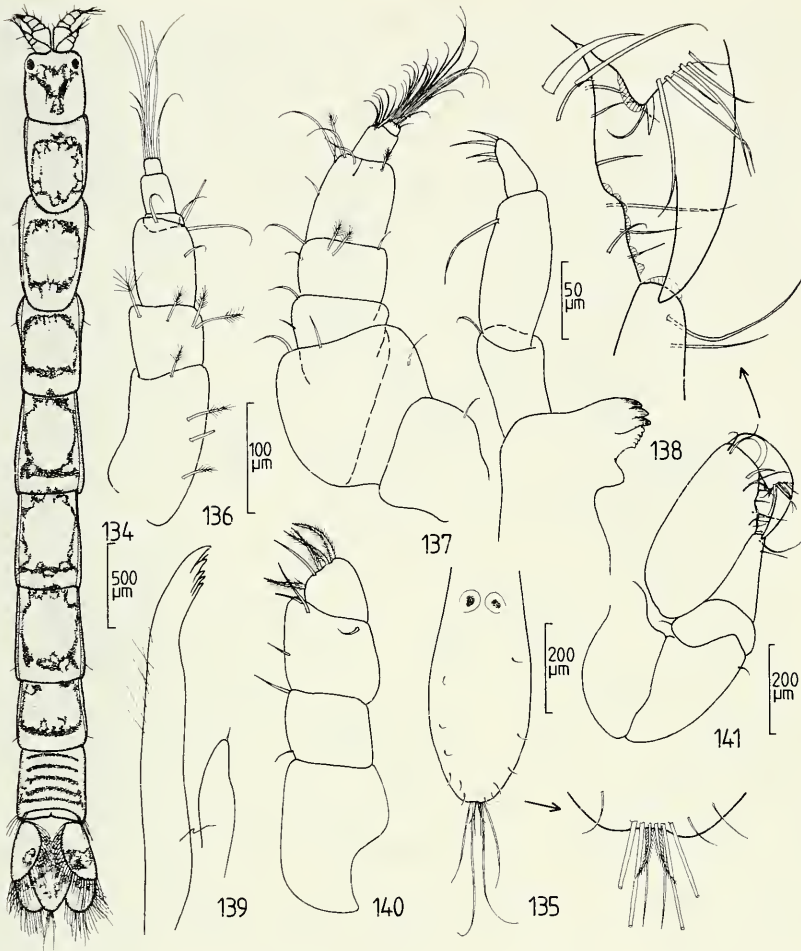
Punta Aguja, about 5 km north-east of Santa Marta: 1 non-reproductive adult (Coll. Müller); from hydroids and bryozoans, 11-15 m, 20 October 1985.

Bahia Concha, about 10 km north-east of Santa Marta: 1 non-reproductive adult (MHNG); *Thalassia*, 0.5-3.5 m, 13 August 1985. 1 non-reproductive adult (MNHN); *Thalassia*, 0.5-3 m, 9 September 1985. 1 non-reproductive adult (MHNG); *Thalassia*, 5 l substratum, 2-4 m, 2 October 1985. 1 postmanca (MHNG); *Thalassia*, 2-3 m, 8 November 1985. 3 mancas (MHNG); from coralline algae in *Thalassia* bed, 2-3 m, 7 January 1986. 4 mancas (Coll. Müller); *Thalassia* and coralline algae, 1.5-2 m, 12 February 1986. 2 non-reproductive adults (INVEMAR); *Thalassia*, 5 l substratum, 1.5-2 m, 3 March 1986. 1 postmanca, 1 manca (Coll. Müller); *Thalassia*, 1-2 m, 2 April 1986. 2 mancas (MHNG); *Thalassia*, 2-3 m, 2 May 1986.

Bahia de Chengue, about 15 km north-east of Santa Marta: 1 postmanca (Coll. Müller); *Thalassia*, 0.5-1 m, 8 September 1985. 1 non-reproductive adult (MHNG); coral rubble, 0.5 m, 13 September 1985. 2 non-reproductive adults, 1 postmanca (Coll. Müller); coral rubble in *Thalassia* bed, 1 November 1985. 1 postmanca, 2 mancas (MHNG); under stones, 0.5 m, 4 April 1986. 1 non-reproductive adult, 1 postmanca (MHNG); from *Halimeda* on reef-flat, intertidal-0.5 m, 14 April 1986. 1 larvigerous ♀ (Coll. Müller); *Thalassia*, 0.5 m, 17 January 1986.

Description, non-reproductive adult. – Body slender, about 12 times longer than wide. Total length 3.4-5.1 mm. Dorsal pigmentation of cephalon roughly triangular with non-pigmented central areas; dorsal pigmentation of pereonites nearly circular or ovate, with non-pigmented central area. Fused pleonite section with 5 transverse pigment stripes; telson and uropods with irregular pigment reticulations. Cephalon 1.2 times longer than wide, with well pigmented dorsolateral eyes in distal third. Body proportions: C<1<2>3=4=5=6>7. Pleonites fused. Telson tongue-shaped, about twice longer than wide; distal margin of telson shallowly concave, with 2 short plumose setae, a pair of short simple setae and 2 pairs of long simple setae.

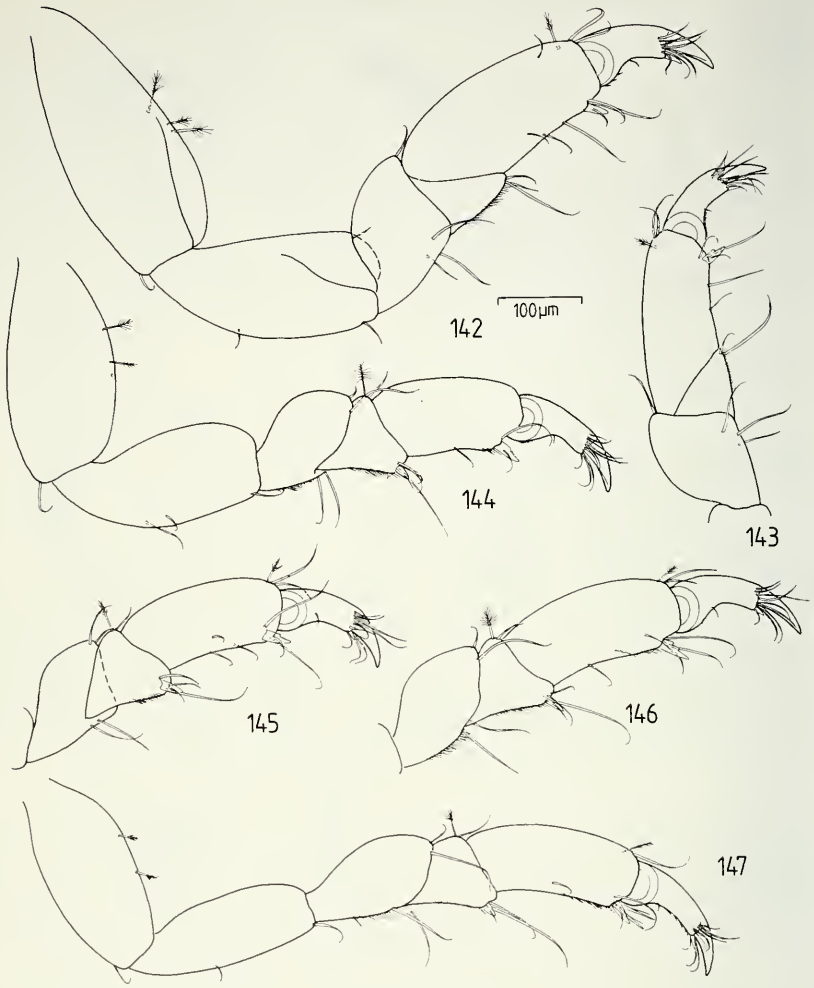
Antenna 1, peduncle 3-articulated, with second article shortest and proximal article longest; flagellum 3-articulated; first article much wider than long; second article longest; small terminal article with 5 simple setae and 2 aesthetascs. Antenna 2 robust, peduncle 5-articulated; second article largest, about as long as wide, grooved to accommodate peduncle of antenna 1; flagellum of 2 setose articles. Incisor of mandible 3-cuspidate, lamina dentata with 4 indentations; second article of 3-articulated palp longest; first and second palp article bearing seta at outer distal margin; small terminal article with 4 short setae in distal half. Maxilla elongate, medially curved in distal fourth; distal part 5-toothed, with short seta between fourth and fifth tooth. Maxilliped lacking endite, palp 3-articulated; first palp article with 2, second with 4 simple setae; medial and distal margin of semioval terminal article bearing a simple seta and 4 plumose setae. Pereopod 1 with propodus



FIGS 134-141.

Mesanthura hopkinsi Hooker, 1985, non-reproductive adult: 134) dorsal view; 135) telson; 136) antenna 1; 137) antenna 2; 138) mandible; 139) maxilla; 140) maxilliped; 141) pereopod 1.

expanded; palm with shallow tubercle in proximal half, bearing row of some scales; mesial surface of propodus with 2 simple setae and a curved spine distally; unguis about as long as dactylus; carpus elongate-triangular, with distal fringe of scales and 2 posterodistal simple setae. Pereopods 2-7 in shape and size similar among one another; posterodistal margin of propodus with robust compound spine; moreover, posterodistal margin of pereopod 7 propodus with two more slender compound spines; carpus of pereopods 2-3 triangular, lacking free anterior margin; carpus of pereopods 4-7 trapezoid, with free anterior margin and short compound spine at posterodistal margin. Pleopod 1, endopodite slender, slightly shorter than operculiform exopodite; endopodite distally with 5, exopodite with 20 plumose marginal setae (drawn as simple setae); sympodite with 3

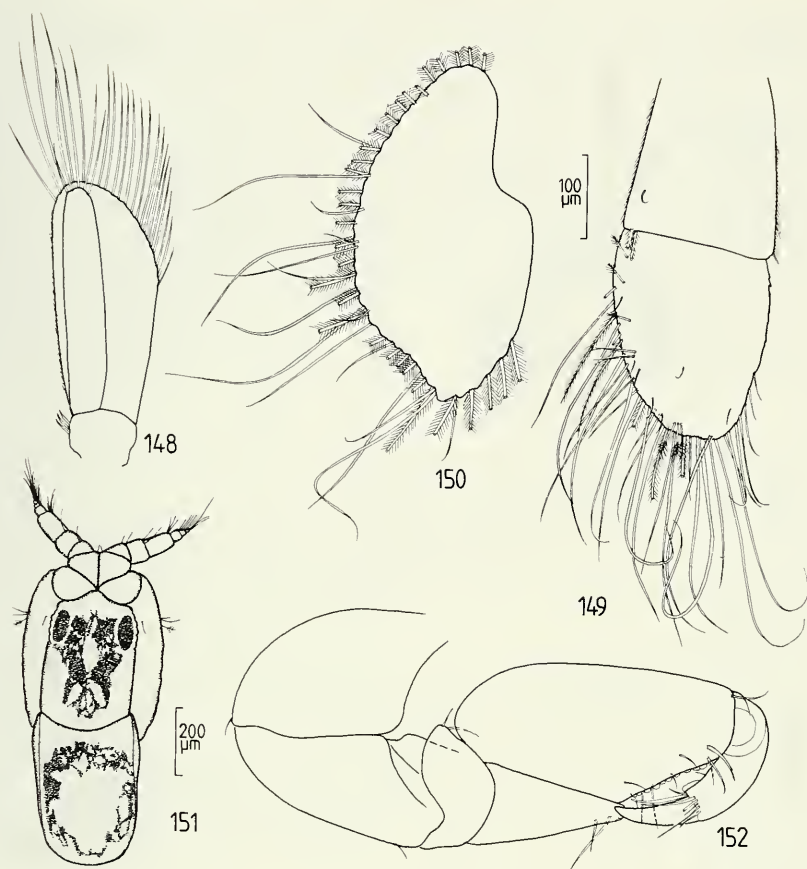


FIGS 142-147.

Mesanthura hopkinsi Hooker, 1985, non-reproductive adult: 142) pereopod 1; 143) distal part of pereopod 2; 144) pereopod 4; 145) distal part of pereopod 5; 146) distal part of pereopod 6; 147) pereopod 7.

retinaculae. Sympodite of uropod subequal in length to semiovate endopodite; endopodite with some plumose and many simple marginal setae; dorsal surface near ectal and distal margin with 8 feathered sensory setae; endopodite not extending beyond distal margin of telson; exopodite roughly ovate, with shallow concavity at outer distal margin; exopodite with several simple and many plumose marginal setae.

♀. – In general features quite similar to non-reproductive adult. Total length 4.6 mm.



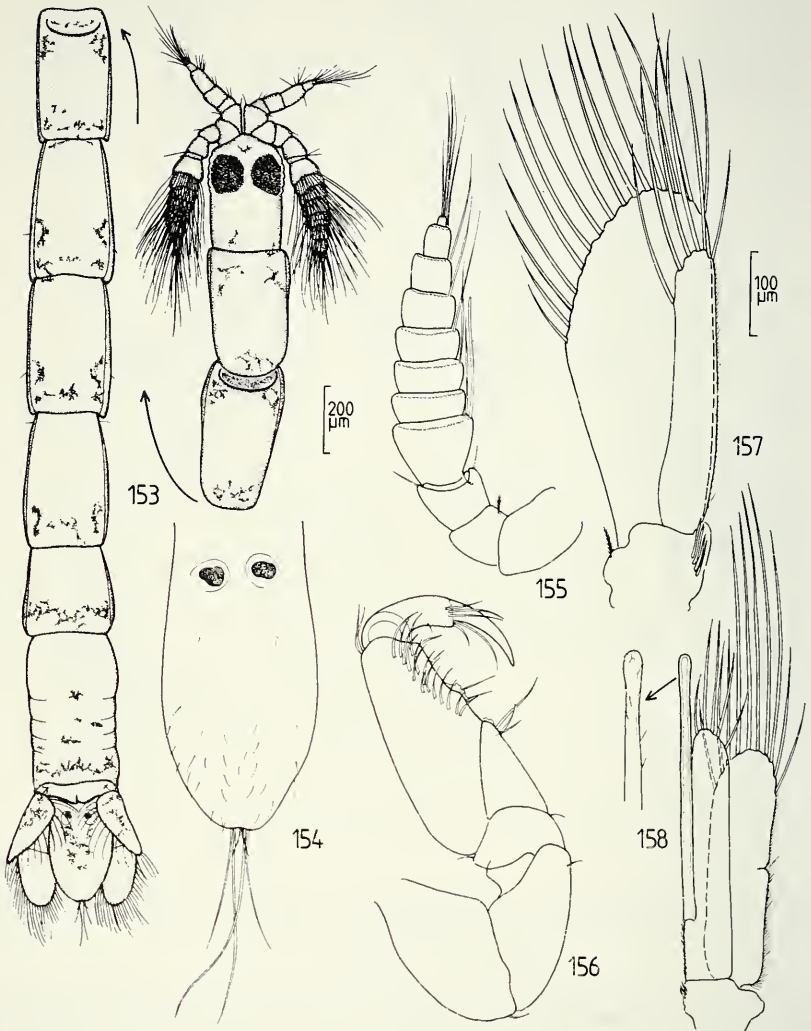
FIGS 148-152.

Mesanthura hopkinsi Hooker, 1985. — Non-reproductive adult: 148) pleopod 1; 149) uropodal sympodite and endopodite; 150) uropodal exopodite. Preparatory ♂: 151) cephalon and first pereonite; 152) pereopod 1.

Preparatory ♂. — In general features similar to other non-reproductive adults and ♂. Total length 2.3-4.5 mm. Eyes somewhat enlarged.

Antenna 1 with only one proximal article; distal part of antenna 1 swollen, all articles fused. Pereopod 1 more robust than in mature ♂.

♂. — In habitus similar to non-reproductive adults and ♀; cephalon, fused pleonite section and pereopods more slender. Total length 3.7 mm, body 14 times longer than wide. Dorsum of body with few irregular pigment reticulations. Cephalon 1.6 times longer than wide, with large, well pigmented dorsolateral eyes. Telson similar to non-reproductive adults, distal margin with 2 short plumose and 2 pairs of long simple setae; dorsal surface of telson with several short setules in distal half.



FIGS 153-158.

Mesanthura hopkinsi Hooker, 1985, ♂: 153) dorsal view; 154) telson; 155) antenna 1; 156) pereopod 1; 157) pleopod 1; 158) pleopod 2.

Antenna 1, peduncle 3-articulated, proximal article longest; flagellum of 9 articles, first one shortest and much wider than long; terminal article minute, with 4 distal simple setae; articles 2-8 swollen, bearing whorl of many aesthetascs. Pereopods generally more slender than in ♀ and non-reproductive adults. Palm of pereopod 1 propodus with shallow tubercle in proximal half, fringed with some scales; mesial surface of propodus with 15 slender, curved spines. Pleopod 1, slender endopodite about 4/5 length of operculiform exopodite; endopodite with 6, exopodite with 15 plumose marginal setae (drawn as simple setae); sympodite with 4 retinaculæ. Rami of pleopod 2 relatively slender; endopodite slightly longer than exopodite; spinulose appendix masculina articulating in proximal third, extending with about 1/4 of its entire length beyond distal margin of endopodite; endopodite with 5, exopodite with 10 distal plumose setae (drawn as simple setae); sympodite with 3 retinaculæ.

Postmanca and manca. – In general habitus quite similar to non-reproductive adults and ♀. Total length 2.7-3.2 and 2.0-2.8 mm, respectively.

Remarks. – *M. hopkinsi* is easily distinguishable from its congeners in the Atlantic Ocean by the circular or ovate, solid pigmentations of the pereonites and by the transverse pigment stripes on the fused pleonite section. The pigment pattern of this species superficially resembles *Mesanthura catenula* (Stimpson, 1855) from south Africa and *Mesanthura occidentalis* Menzies & Barnard, 1959 from California. However, these species have a solid pigment patch on the fused pleonite section (see Kensley, 1982b: 154, fig. 36; Wägele, 1984a: 5-3, fig. 8). The ♂ of *Mesanthura hopkinsi* is described herein for the first time.

In the Santa Marta area *M. hopkinsi* did not show a distinct habitat preference, though many specimens have been found associated with *Thalassia* sea grass. As for *Mesanthura punctillata* redescribed herein, it is a surprising fact, that none of the specimens collected occurred in *Syringodium* beds. In addition to the association with *Thalassia*, *M. hopkinsi* has been found on the fouling of pilings in the harbour of Santa Marta, in algal vegetation, coral rubble and under rocks on sand bottom. Summarizing the information from Colombia and literature, *M. hopkinsi* has a vertical distribution from the intertidal to 55 m.

Distribution. – Up to now the species was known only from Florida and the Gulf of Mexico (Kensley & Schotte, 1989: 51). The present record extends its known range considerably southward to the northern coast of South America.

Mesanthura pulchra Barnard, 1925

References for this species are given in Müller (1991: 750).

Material. – Punta brava, near airport of Santa Marta: 2 ♂♂, 6 non-reproductive adults (1 preparatory ♂) (MHNG); from *Sargassum* on rocky shore, lower intertidal. 2 ♂♂, 4 non-reproductive adults, 2 mancas (Coll. Müller); from *Sargassum* on rocky shore, lower intertidal, 9 October 1985. 2 non-reproductive adults, 4 mancas (MNHN); *Sargassum* on rocky shore, intertidal, 18 November 1985.

Playa de las rocas, near Santa Marta, El Rodadero: 1 manca (Coll. Müller); under stone on sand bottom, 0-1 m, 9 January 1986.

Playa blanca near Punta Gaira, Santa Marta: 1 non-reproductive adult (Coll. Müller); under stone on sand bottom, 0.5-1 m, 30 December 1985.

Harbour of Santa Marta, fouling on pilings: 1 ♀ (Coll. Müller); 27 May 1985. 1 non-reproductive adult (MHNG), 0-1 m, 31 July 1985. 1 non-reproductive adult (INVEMAR); 0.5-6 m,

3 September. 1 ovigerous ♀, 1 non-reproductive adult (Coll. Müller); 0-1 m 24 November 1985. 1 postmanca (MHNG); 0-2 m, 1 February 1986. 2 non-reproductive adults, 1 manca (MNHN); 0-1 m, 14 March 1986.

Bahia de Santa Marta, other records: 2 mancas (Coll. Müller); Punta de Betin, from hydroids and detritus, 22-23 m, 19 June 1985. 1 non-reproductive adult (Coll. Müller); *Thalassia*, 2 m, 10 September 1985. 4 non-reproductive adults, 1 manca (MHNG); Punta de Betin, coral rubble, 22 m, 17 December 1985.

Bahia Concha, about 10 km north-east of Santa Marta: 1 ♂, 1 non-reproductive adult, 1 manca (MHNG); from algae on rocky shore, intertidal, 22 May 1985. 1 ♂ (Coll. Müller); from *Digenia simplex* on rocky shore, 5 l substratum, intertidal, 7 June 1985. 1 postmanca (MHNG); *Thalassia*, 1 m, 27 June 1985. 1 manca (MHNG); *Thalassia*, 5 l substratum, 2 m, 8 July 1985. 4 non-reproductive adults (Coll. Müller); *Digenia simplex* on rocky shore, intertidal, 13 August 1985. 1 non-reproductive adult (Coll. Müller); *Digenia simplex* on rocky shore, lower intertidal, 2 October 1985. 1 non-reproductive adult (Coll. Müller); *Digenia simplex* on rocky shore, 5 l substratum, intertidal, 8 November 1985. 1 ♀ (MHNG); from *Thalassia* and coralline algae, 1.5-2 m, 12 February 1986.

Bahia de Chengue, about 15 km north-east of Santa Marta: 1 ♂, 1 non-reproductive adult, 1 postmanca (MHNG); coral rubble in *Thalassia* bed, 1 November 1985. 3 non-reproductive adults, 1 postmanca (MHNG); under stones, 0.5 m, 4 April 1986. 3 non-reproductive adults, 1 postmanca (Coll. Müller), *Halimeda* on reef-flat, intertidal-0.5 m, 14 April 1986.

Bahia de Nenguangue, about 25 km north-east of Santa Marta: 3 non-reproductive adults, 2 mancas (MHNG); from brown algae on rocky shore, intertidal, 5 August 1985. 1 ♂ (MHNG), 3 non-reproductive adults (Coll. Müller); Playa del muerto, from *Digenia* and *Sargassum* on rocky shore, intertidal, 30 July 1985. 1 manca (MHNG); from *Cladophyllum schnetteri* on rocky shore, intertidal-0.5 m, 23 September 1985.

Bahia de Cinto, about 30 km north-east of Santa Marta: 1 non-reproductive adult (MHNG), 2 non-reproductive adults, 1 postmanca, 2 mancas (Coll. Müller); from algae on rocky shore, intertidal, 27 May 1985. 3 non-reproductive adults, 1 postmanca, 1 manca (MHNG); from algae, hydroids and detritus, 6 m, 4 June 1985. 3 non-reproductive adults (MHNG); under stones, 0-0.5 m, 14 April 1986.

Punta el Diamante near Cañaverales, about 40 km north-east of Santa Marta: 4 non-reproductive adults, 1 postmanca, 1 manca (Coll. Müller); from algae, hydroids and bryozoans on rocks, 6-10 m, 26 September 1985.

Arreçifes near Cañaverales, about 40 km north-east of Santa Marta: 1 ♂, 1 postmanca, 1 manca (Coll. Müller); *Thalassia* in lagoon, 1-1.5 m, 25 February.

Remarks. – Though *Mesanthura pulchra* is the most often collected species of the genus in the Caribbean, no information was available concerning its substrate preference. Based upon the data from the Santa Marta area it becomes obvious, that specimens have been often found associated with algal substratum. The species was also not uncommon in *Thalassia* beds, coral rubble and fouling on pilings in the harbour of Santa Marta. It should be noted that no material of *M. pulchra* was found in Bahia de Gairaca (located between Bahia Concha and Bahia de Nenguangue), where extensive samples have been taken. Summarizing the information from the literature and Colombia, the species has a vertical distribution from the intertidal to about 36 m.

Mesanthura pulchra is easily distinguishable from its congeners in the Western Atlantic by its characteristic pigment pattern (see Kensley & Schotte, 1989: 49, fig. 19B). The morphological features have been redescribed in detail by Wägele (1984b: 389).

Distribution: Up to now *M. pulchra* was known from several locations in the Caribbean and the Gulf of Mexico (listed in Kensley & Schotte, 1989: 53). The species is first recorded from the southern Caribbean Sea.

Mesanthura punctillata Kensley, 1982 (Figs 159-180)

Mesanthura punctillata Kensley, 1982a: 339, figs 154-155.

Mesanthura punctillata; Negoescu & Wägele, 1989: 127.

Mesanthura punctillata; Kensley & Schotte, 1989: 53, figs 19 C, 22 A-F.

Material. – Punta brava, near airport of Santa Marta: 2 non-reproductive adults, 1 postmanca, 1 manca (Coll. Müller); *Sargassum* on rocky shore, lower intertidal, 9 October 1985.

Bahía de Santa Marta: 2 non-reproductive adults (MHNG); *Thalassia*, 2 m, 10 September 1985. 1 larvigerous ♀, 2 non-reproductive adults (Coll. Müller); *Thalassia*, 1-2 m, 13 January 1986.

Bahía Concha, about 10 km north-east of Santa Marta: 2 non-reproductive adults (MHNG); *Thalassia*, 1 m, 27 June 1985. 2 non-reproductive adults, 2 postmancas (INVEMAR); *Thalassia*, 1 m, 5 l substratum, 5 July 1985. 1 non-reproductive adult, 1 postmanca (Coll. Müller); *Thalassia*, 2 m, 5 l substratum, 8 July 1985. 1 non-reproductive adult (MHNG); *Thalassia*, 0.5-3.5 m, 13 August 1985. 1 non-reproductive adult, 4 mancas (MHNG); *Thalassia*, 0.5-3 m, 9 September 1985. 1 ♂, 1 non-reproductive adult, 1 postmanca (Coll. Müller); *Thalassia*, 2-4 m, 5 l substratum, 2 October 1985. 1 postmanca (MHNG); *Thalassia*, 2-3 m, 8 November 1985. 2 ovigerous ♀, 8 non-reproductive adults, 4 postmancas, 2 mancas (MHNG); *Thalassia*, 2-3 m, 7 December 1985. 1 non-reproductive adult, 1 postmanca, 1 manca (MHNG); *Thalassia*, 1-2 m, 2 April 1986.

Bahía de Chengue, about 15 km north-east of Santa Marta: 1 ovigerous ♀ (Coll. Müller); from floating *Sargassum* over sand bottom, 7-9 m, 31 May 1985.

Bahía de Gairaca, about 20 km north-east of Santa Marta: 1 non-reproductive adult, 1 postmanca (Coll. Müller); *Thalassia*, 1-2 m, 4 October 1985. 2 non-reproductive adults, 2 postmancas (MHNG); *Thalassia*, 1-2 m, 17 January 1986. 3 non-reproductive adults, 2 mancas (MHNG); *Thalassia*, 1-3 m, 24 January 1986.

Bahía de Nenguangue, about 25 km north-east of Santa Marta: 1 ovigerous ♀ (INVEMAR), 1 non-reproductive adult (Coll. Müller); *Thalassia*, 0.5-2 m, 30 July 1985.

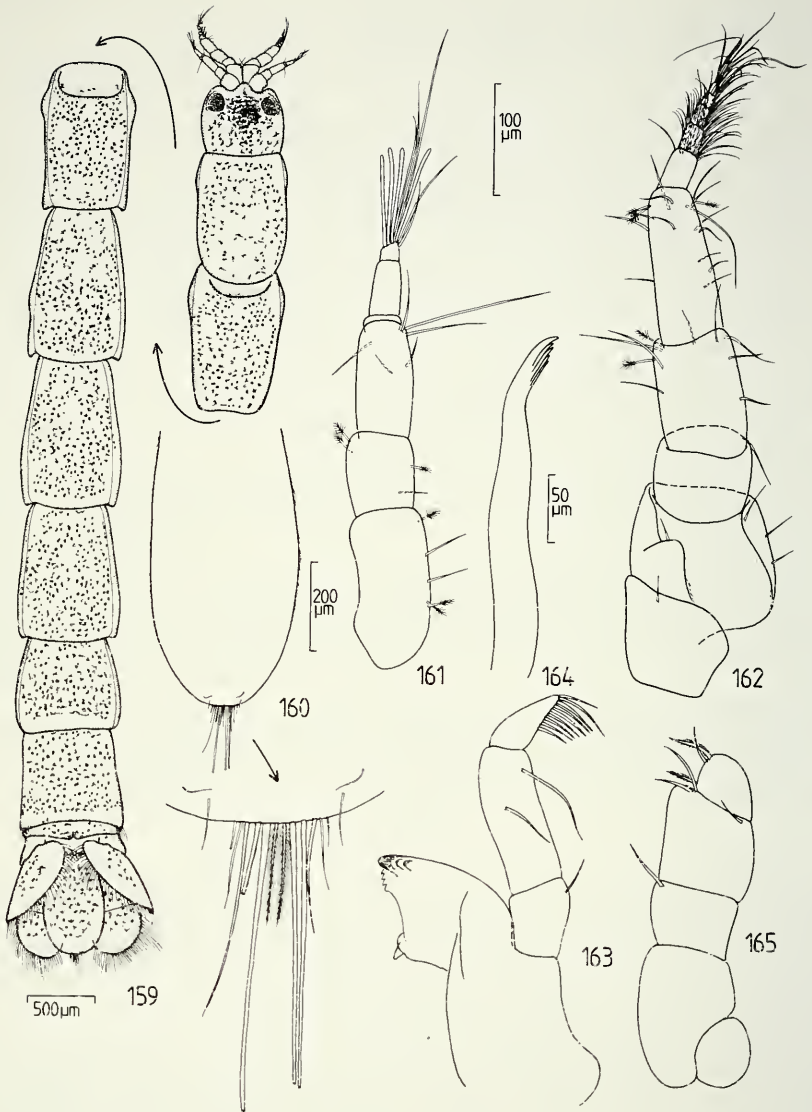
Bahía de Cinto, about 30 km north-east of Santa Marta: 1 non-reproductive adult (MHNG); from algae, hydroids and detritus, 6 m, 4 June 1985. 1 non-reproductive adult (Coll. Müller); *Thalassia*, 1-3.5 m, 8 August 1985. 2 ♀♀ (1 ovigerous), 3 non-reproductive adults (MHNH); *Thalassia*, 1-3 m, 5 September 1985.

Punta el Diamante near Cañaverales, about 40 km north-east of Santa Marta: 1 larvigerous ♀, 1 postmanca (Coll. Müller); from algae, hydroids and bryozoans, 6-10 m, 26 September 1985.

Arreçifes, about 40 km north-east of Santa Marta: 2 non-reproductive adults, 3 postmancas (Coll. Müller); *Thalassia* in lagoon, 1-1.5 m, 25 February 1986.

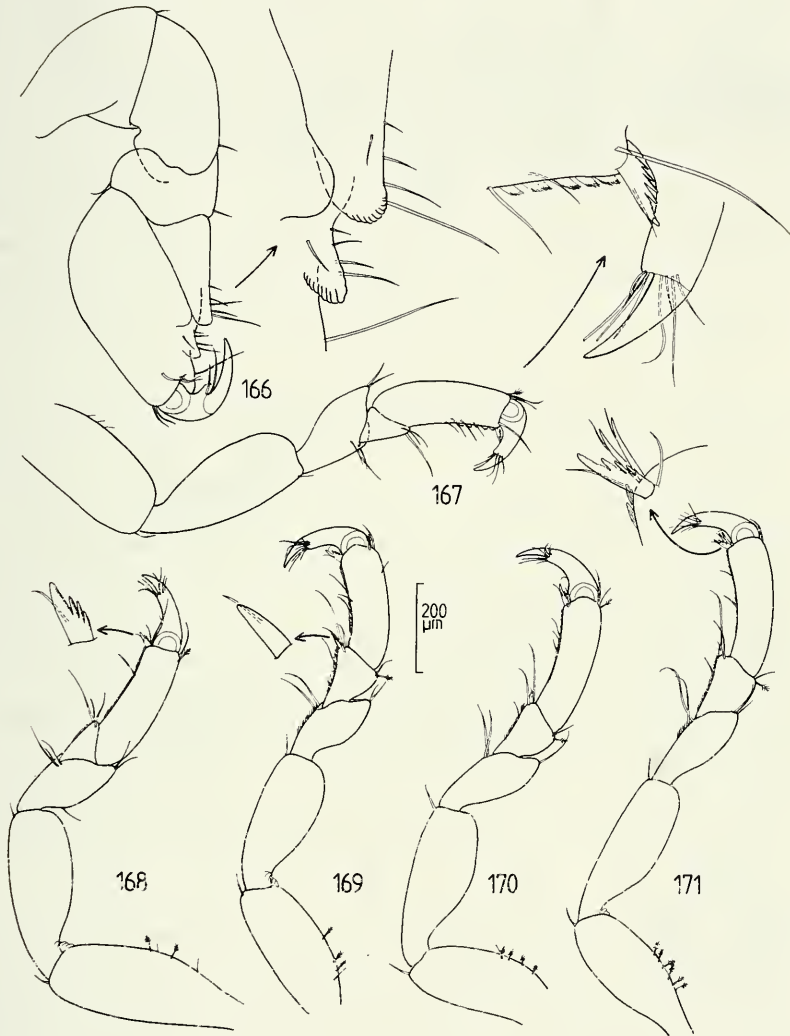
Description, non-reproductive adult. – Body slender, about 11 times longer than wide. Total length 3.1-6.9 mm. Dorsum of body covered with numerous small pigment spots. These spots concentrated on the mediodorsal surface of the cephalon, forming an almost solid patch. Cephalon slightly wider than long, with well pigmented dorsolateral eyes. Body proportions: C<1=2>3<4>5>6>7. Pleonites fused. Telson tongue-shaped, twice longer than wide; rounded distal margin with some short setae (two of them plumose) and 4 long setae in arrangement as figured.

Antenna 1, peduncle 3-articulated, with second article shortest and proximal article longest; third peduncular article with 2 long, laterally directed setae; flagellum 3-articulated; first article shortest and widest, second article longest; terminal article bearing 5 simple setae and 4 aesthetascs. Antenna 2, peduncle 5-articulated; second article largest, grooved to accommodate peduncle of antenna 1; flagellum of 5 setose articles, decreasing in size distally. Incisor of mandible 4-cuspidate, lamina dentata with 4 indentations; second article of 3-articulated palp longest; first article bearing one seta, second with 2 setae, third article with 9 short setae in two distal thirds. Maxilla elongate, medially curved in distal half, distal part 5-toothed. Maxilliped lacking endite, palp 3-articulated; first palp article with one seta, second with 3 setae; third article almost semicircular, medial margin with a



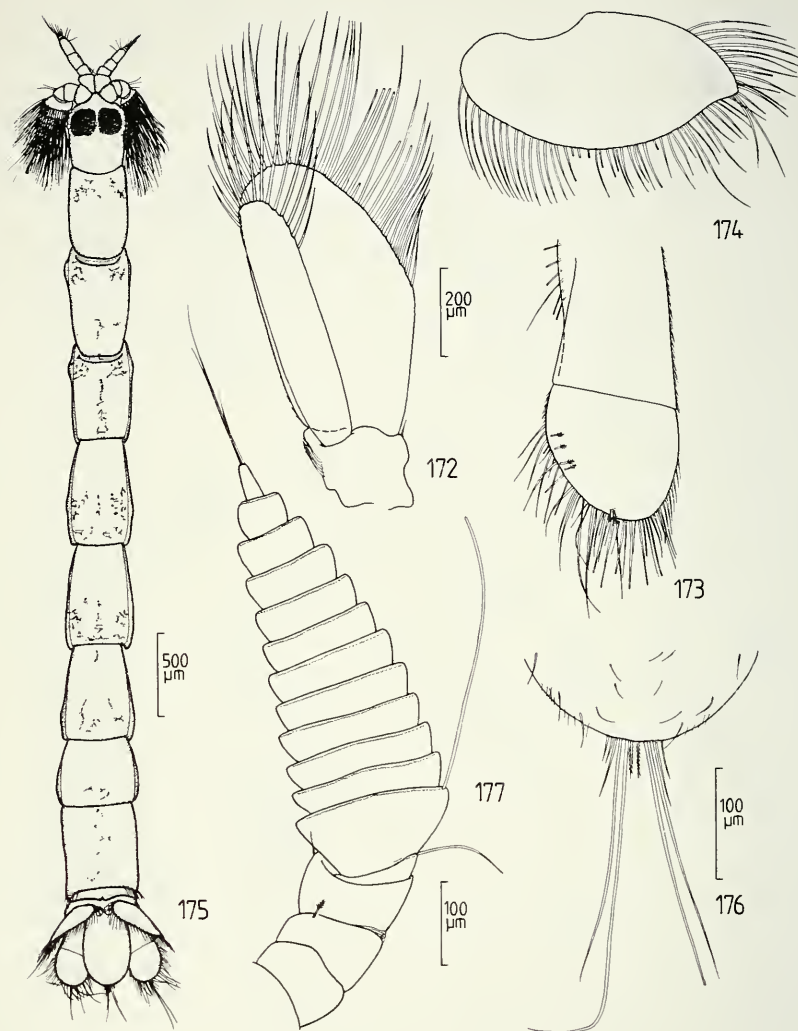
FIGS 159-165.

Mesanthura punctillata Kensley, 1982, non-reproductive adult: 159) dorsal view; 160) telson; 161) antenna 1; 162) antenna 2; 163) mandible; 164) maxilla; 165) maxilliped.



Figs 166-171.

Mesanthura punctillata Kensley, 1982, non-reproductive adult: 166) pereopod 1; 167) pereopod 2; 168) pereopod 3; 169) pereopod 4; 170) pereopod 6; 171) pereopod 7.



FIGS 172-177.

Mesanthura punctillata Kensley, 1982. — Non-reproductive adult: 172) pleopod 1; 173) uropodal sympodite and endopodite; 174) uropodal exopodite. ♂: 175) dorsal view; 176) distal part of telson; 177) antenna 1.

simple and 2 plumose setae. Pereopod 1 with propodus expanded; palm with short, ovate process having transverse ridges and bearing 4 simple setae; unguis twice length of dactylus; carpus elongate-triangular, posterodistal margin with 4 simple setae increasing in length distally; distal margin of carpus with several transverse ridges. Pereopods 2-7 in shape and size similar among one another; posterior margin of propodus faintly concave, bearing row of scales and a denticulate compound spine distally; moreover, posterodistal margin of pereopod 7 propodus with two more slender compound spines; carpus of pereopods 2-3 triangular; carpus of pereopods 4-7 trapezoid, with free anterior margin and short compound spine at posterodistal margin. Pleopod 1, endopodite relatively slender, 9/10 length of operculiform exopodite; endopodite distally with 13, exopodite with 35 plumose setae (drawn as simple setae); sympodite with 3 retinaculæ. Sympodite of uropod somewhat longer than endopodite; endopodite semiovate, bearing several simple and plumose marginal setae (drawn as simple setae); dorsal surface near ectal and distal margin with 7 feathered sensory setae; endopodite not extending beyond distal margin of telson; exopodite twice longer than wide, with sinuous outer margin, bearing many simple and plumose marginal setae (drawn as simple setae).

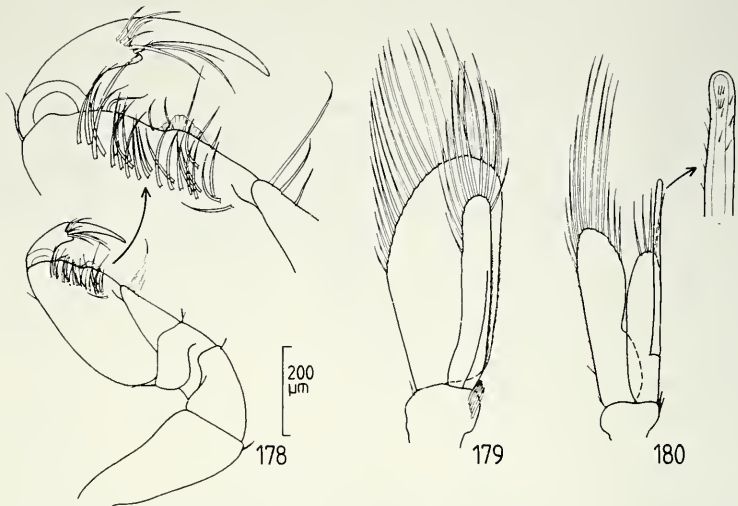
♀. – In general features quite similar to non-reproductive adult. Total length 6.8-8.7 mm.

♂. – In habitus similar to non-reproductive adult and ♀. Total length 5.4 mm. Dorsum of pereonites and fused pleonite section with few pigment spots and reticulations. Telson quite similar to ♀ and immature specimens, with some short and 2 pairs of long distal setae.

Antenna 1, peduncle 3-articulated, articles wider than long; flagellum of 13 articles, first one shortest and much wider than long; slender terminal article with 3 simple setae; articles 2-12 swollen, bearing whorl of many filiform aesthetascs. Pereopods generally more slender than in other developmental stages. Palm of pereopod 1 propodus lacking distinct projection, bearing only a short lamella; mesial surface of pereopod 1 propodus with group of 24 slender curved spines. Pleopod 1, slender endopodite about 4/5 length of operculiform exopodite; endopodite with 11, exopodite with 21 plumose marginal setae (drawn as simple setae). Rami of pleopod 2 relatively slender; endopodite about 4/5 length of exopodite; spinulose appendix masculina slender, articulating at distal proximal third, extending with almost half of its entire length beyond distal margin of endopodite; endopodite with 4, exopodite with 12 distal plumose setae (drawn as simple setae); sympodite with 2 retinaculæ.

Postmanca. – In general habitus quite similar to non-reproductive adult and ♀. Total length 2.9-3.1 and 2.2-2.4 mm, respectively.

Remarks. – *M. punctillata* is easily distinguishable from its congeners in the Atlantic Ocean by its characteristic pigment pattern. The affinities to other species are not clear, because most species of the genus are incompletely described and differ only in few morphological characters. The colombian material differs from the original description (based upon material from Belize) in some aspects. All setae at the terminal article of the maxillipedal palp of the ♀ drawn in the original description are shown as simple setae. However, there are 2 plumose setae at this article in colombian specimens. The presence of plumose setae at the terminal article of the maxilliped is a common feature for *Mesanthura*. Therefore it seems, that this feature has been overlooked in the Belizean material. Moreover, the appendix masculina of the figured ♂ in the original description is distinctly shorter than in colombian males. It extends beyond the endopodite with only 1/5 of its entire length (cf. Kensley, 1982a: 339, figs 154-155).



Figs 178-180.

Mesanthura punctillata Kensley, 1982, ♂: 178) pereopod 1; 179) pleopod 1; 180) pleopod 2.

In the Santa Marta area *M. punctillata* shows a preference to *Thalassia* beds. Surprisingly, none of the specimens collected has been found in *Syringodium* seagrass, where extensive samples have also been taken. Few specimens were found associated with algae or other substratum. Specimens from Belize were collected from "coral rubble and coarse sediments" (Kensley, 1982a: 339). The vertical distribution of this species ranges from the intertidal to 20 m.

Distribution. – *Mesanthura punctillata* was known from the Turks and Caicos Islands and from Belize (Kensley & Schotte, 1989: 53). It is first recorded from the southern Caribbean Sea.

ZUSAMMENFASSUNG

Es wird über neue Arten und Funde mariner Isopoden der Gattungen *Amakusanthura*, *Cortezura* und *Mesanthura* (Anthuridae) aus der Region Santa Marta, Karibische Küste von Kolumbien berichtet. *Amakusanthura paramagnifica* n. sp., *A. tengo* n. sp. und *A. vermiformis* n. sp. werden beschrieben. Vollständige Wiederbeschreibungen werden für *Amakusanthura signata* (Menzies & Glynn, 1968), *Mesanthura cf. brasiliensis* Koenig, 1980, *M. hopkinsi* Hooker, 1985 und *M. punctillata* Kensley, 1982 gegeben, eine ergänzende Beschreibung für *Cortezura confixa* (Kensley, 1978). Die Verwandtschaftsbeziehungen der meisten Arten werden diskutiert, mit Angaben zu deren Substratpräferenz und geographischer Verbreitung.

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